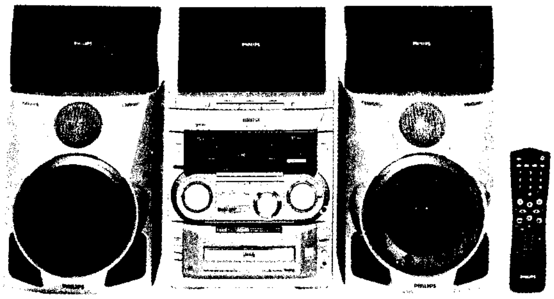
DVD Mini System **FW-D5/21/21M/22/30/37**

Service
Service
Service



Service Manual

DVD VIDEO · COMPACT disc DIGITAL VIDEO · COMPACT disc DIGITAL AUDIO Recordable ReWritable

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CLASS 1
LASER PRODUCT

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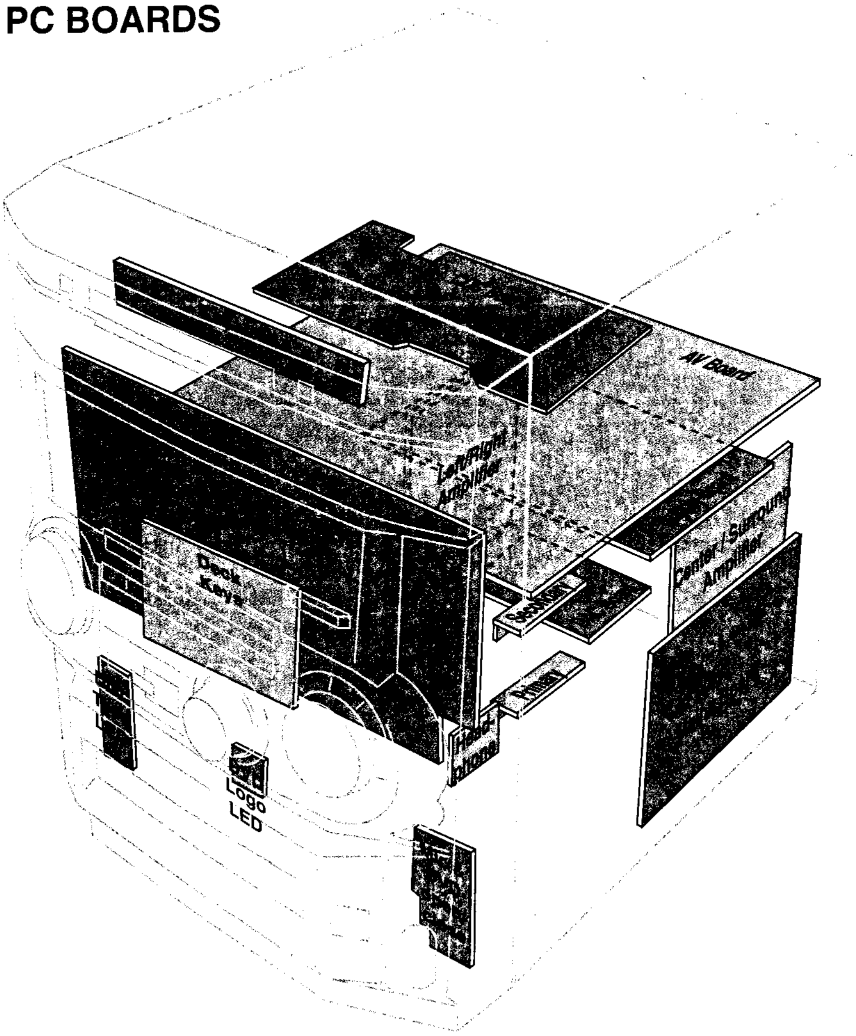
PCS 103 795

PHILIPS

LOCATION OF PC BOARDS


AV Board
Left/Right Amplifier
Center / Surround Amplifier
Deck Keys
Logo LED
Secondary
Primary
Head-phone

VERSION VARIATIONS:

Type /Versions: / Features & Board in used:	FW-D5								
	/21	/21M	/22	/30	/37				
Karaoke	x	x							
News			x						
RDS			x						
CD Text			x						
Low Power Standby (No display)			x		x				
Voltage Selector	x	x							
Aux / CDR Input	x	x	x	x	x				
Digital Output	x	x	x	x	x				
Headphone Socket	x	x	x	x	x				
Line Output	x	x	x	x	x				
Subwoofer Output	x	x	x	x	x				
Surround Output	x	x	x	x	x				
S-Video Output	x	x	x	x	x				
SCART connector			x						
Remote Control RC2516/01			x	x	x				
Remote Control RC2567/01	x	x							
Tuner board - ECO5 Sys	x	x		x	x				
Tuner board - Tuner 95			x						

SPECIFICATIONS

GENERAL:

Mains voltage : 110-127V/220-240V Switchable for /21/21M
120V for /37
220V for /33
220-230V for /22
230-240V for /30
Mains frequency : 50/60Hz
Power consumption Active : < 230W
< 280W for /37
Standby : < 22W
Low Power Standby : < 2W
Clock accuracy : < 4 seconds per day
Dimension centre unit : 265 x 310 x 390mm

TUNER:

FM

Tuning range : 87.5-108MHz
Grid : 50kHz
100kHz for /37
IF frequency : 10.7MHz ± 25kHz
Aerial input : 75Ω coaxial
300Ω click fit for /37
Sensitivity at 26dB S/N : < 7µV
Selectivity at 600kHz bandwidth : > 25dB
Image rejection : > 25dB [> 75dB]
Distortion at RF=1mV, dev. 75kHz : < 3%
-3dB Limiting point : < 8µV
Crosstalk at RF=1mV, dev. 40kHz : > 18dB

MW

Tuning range : 531-1602kHz
530-1700kHz for /21/37
Grid : 9kHz
10kHz for /21/37
IF frequency : 450kHz ± 1kHz
Aerial input : Frame aerial
Sensitivity at 26dB S/N : < 4.0mV/M
Selectivity at 18kHz bandwidth : > 18dB
IF rejection : > 45dB
Image rejection : > 28dB
Distortion at RF=50mV, m=80% : < 5%

LW

Tuning range : 153-279kHz
Grid : 3kHz
IF frequency : 450kHz ± 1kHz
Aerial input : Frame aerial
Sensitivity at 26dB S/N : [< 7.0mV/M]
Selectivity at 18kHz bandwidth : [> 22dB]
IF rejection : [> 26dB]
Image rejection : [> 35dB]
Distortion at RF=50mV, m=80% : [< 5%]

AMPLIFIER:

Output power Left/Right : 2 x 50W FTC [1] @ 6Ω
2 x 50W RMS [2] @ 6Ω /37
Center : 1 x 50W @ 6Ω
Surround : 2 x 5W @ 6Ω
Frequency response within ± 3dB : 20Hz-20kHz
Dynamic Bass Boost : Beat, Punch, Blast, DBB Off [3]
Digital Sound Control : Optimal, Classic, Techno, Vocal, Rock, Jazz [3]
Personal Control : 6 presets
VEC Control : Hall, Club, Disco, Concert, Arcade [3]
Input sensitivity
Aux/CDR in : 500mV ± 2dB at 1kΩ
Mic : {2.5mV ± 2dB} at 600Ω
Output sensitivity
Line out : 1.0V ± 2dB at 22kΩ
Surround out : 750mV ± 2dB at 22kΩ
Sub-woofer : 1.5V ± 2dB at 22kΩ
Headphone : 15mW ± 2dB at 32Ω
Digital Out : IEC958 for CDDA / LPCM
IEC1937 for MPEG1, MPEG2 and AC-3
DTS

COMPACT DISC:

Measurement done at output conn. of the CDC module.
Frequency response within ± 1.5dB : 20Hz - 20kHz
Output level (in Vrms) : 550mV, Z_{out} = 100Ω
Signal/Noise ratio (A-weighted) : > 76dBA
Distortion at 1kHz : < 0.02%
Channel unbalance : < ± 1dB
Channel separation at 1kHz : > 60dB
De-emphasis : 0 or 15/50 mS (Switched by subcode on the disc)

DVD PLAYER:

Playback system : DVD-Video, Video CD, CD (CD-R & CD-RW)
Video (CVBS) output [4] : 1Vp-p ± 0.1 V
S-Video output [4]
Y level : 1Vp-p ± 0.1 V
C level : 300mV +1/-4dB

[....] Values indicated are for "Tuner 95 Board" only
{....} Values indicated are for Karaoke version only

[1] ±1dB, 60Hz - 12,5kHz, 10% THD

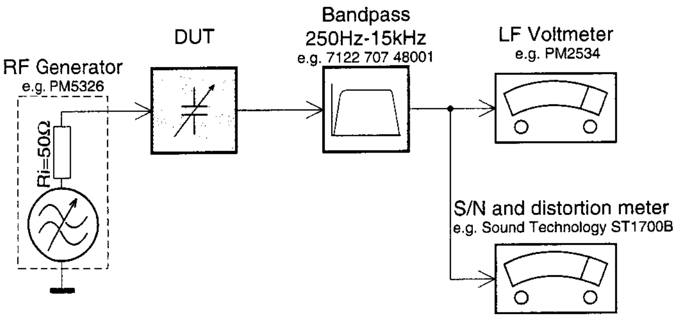
[2] ±1dB, 1kHz, 10% THD

[3] Frequency response in each setting is software controlled.

[4] Output terminated with 75Ω

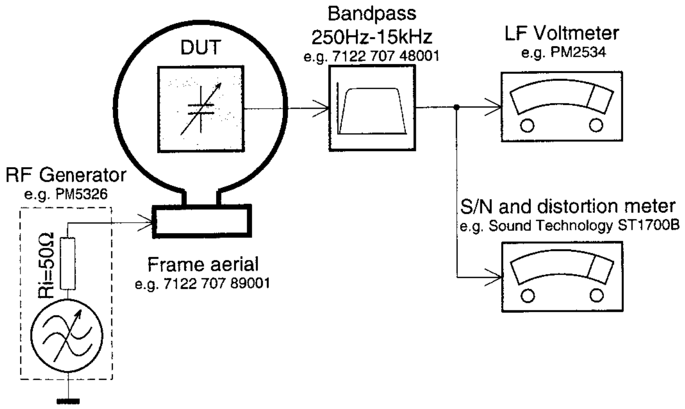
MEASUREMENT SETUP

Tuner FM


RF Generator
e.g. PM5326
Ri=50Ω
DUT
Bandpass
250Hz-15kHz
e.g. 7122 707 48001
LF Voltmeter
e.g. PM2534
S/N and distortion meter
e.g. Sound Technology ST1700B

Use a bandpass filter to eliminate hum (50Hz, 100Hz) and disturbance from the pilottone (19kHz, 38kHz).

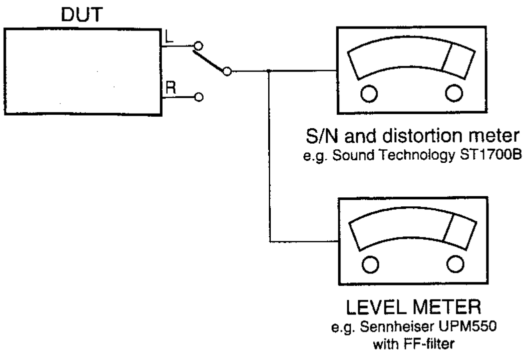
Tuner AM (MW,LW)


DUT
Bandpass
250Hz-15kHz
e.g. 7122 707 48001
LF Voltmeter
e.g. PM2534
RF Generator
e.g. PM5326
Ri=50Ω
Frame aerial
e.g. 7122 707 89001
S/N and distortion meter
e.g. Sound Technology ST1700B

To avoid atmospheric interference all AM-measurements have to be carried out in a Faraday´s cage.
Use a bandpass filter (or at least a high pass filter with 250Hz) to eliminate hum (50Hz, 100Hz).

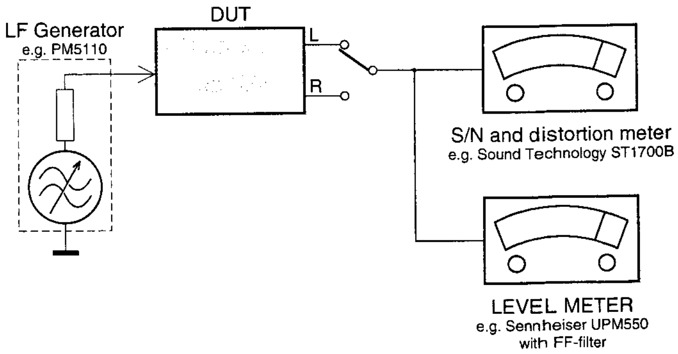
CD

Use Audio Signal Disc SBC429 4822 397 30184
(replaces test disc 3)


DUT
L
R
S/N and distortion meter
e.g. Sound Technology ST1700B
LEVEL METER
e.g. Sennheiser UPM550
with FF-filter

Recorder

Use Universal Test Cassette **CrO2** SBC419 4822 397 30069
or Universal Test Cassette **Fe** SBC420 4822 397 30071


LF Generator
e.g. PM5110
DUT
L
R
S/N and distortion meter
e.g. Sound Technology ST1700B
LEVEL METER
e.g. Sennheiser UPM550
with FF-filter

SERVICE AIDS

Service Tools:

Universal Torx driver holder	4822 395 91019
Torx bit T10 150mm	4822 395 50456
Torx driver set T6 - T20	4822 395 50145
Torx driver T10 extended	4822 395 50423

Cassette:

SBC419 Test cassette CrO2	4822 397 30069
SBC420 Test cassette Fe	4822 397 30071
MTT150 Dolby level 200nWb/M	4822 397 30271

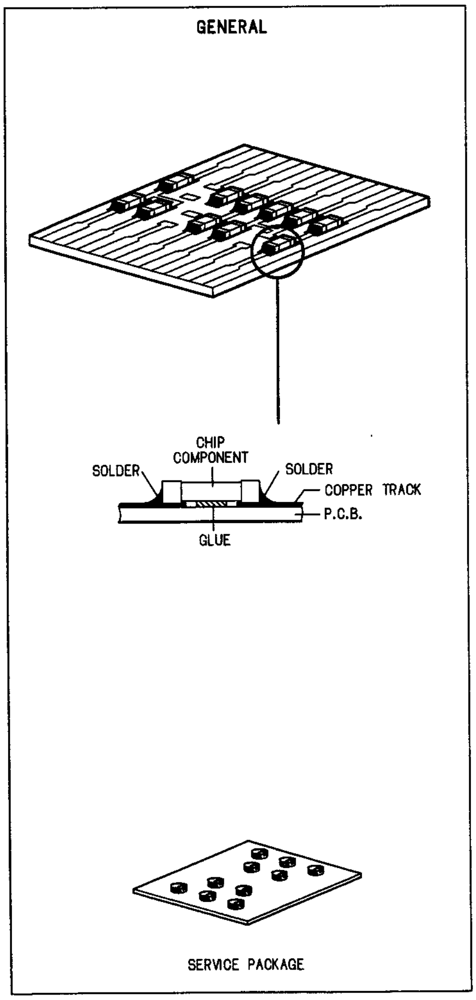
Compact Disc:

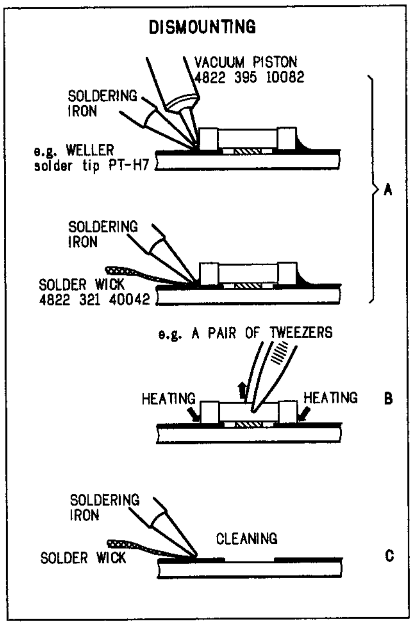
SBC426/426A Test disc 5 + 5A	4822 397 30096
SBC442 Audio Burn-in Test disc 1kHz	4822 397 30155
SBC429 Audio Signals disc	4822 397 30184
Dolby Pro-logic Test Disc	4822 395 10216

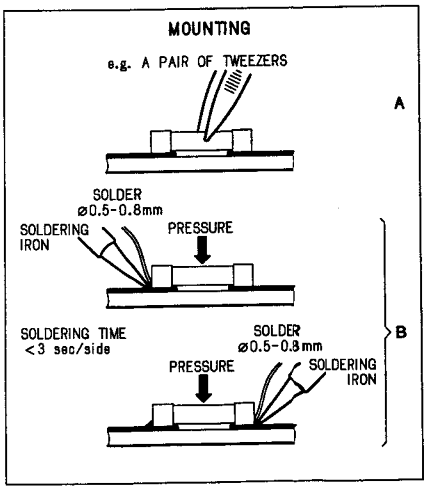
ESD Equipment:

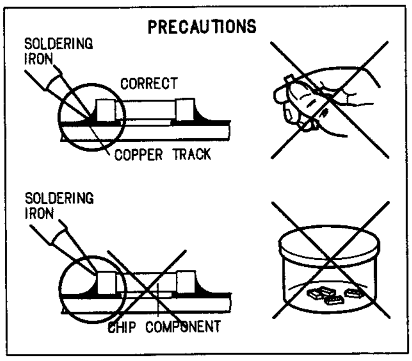
Anti-static table mat - large 1200x650x1.25mm	4822 466 10953
Anti-static table mat - small 600x650x1.25mm	4822 466 10958
Anti-static wristband	4822 395 10223
Connector box (1MΩ)	4822 320 11307
Extension cable (to connect wristband to conn. box)	4822 320 11305
Connecting cable (to connect table mat to conn. box)	4822 320 11306
Earth cable (to connect product to mat or box)	4822 320 11308
Complete kit ESD3 (combining all above products)	4822 320 10671
Wristband tester	4822 344 13999

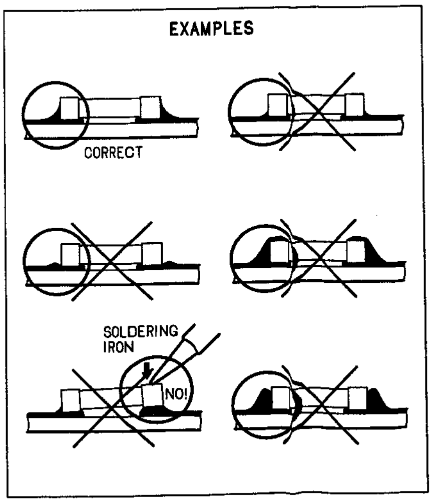
HANDLING CHIP COMPONENTS


GENERAL
CHIP COMPONENT
SOLDER
SOLDER
COPPER TRACK
P.C.B.
GLUE
SERVICE PACKAGE


DISMOUNTING
VACUUM PISTON
4822 395 10082
SOLDERING IRON
e.g. WELLER solder tip PT-H7
A
SOLDERING IRON
SOLDER WICK
4822 321 40042
e.g. A PAIR OF TWEEZERS
HEATING
HEATING
B
SOLDERING IRON
CLEANING
SOLDER WICK
C


MOUNTING
e.g. A PAIR OF TWEEZERS
A
SOLDER
ø0.5-0.8mm
SOLDERING IRON
PRESSURE
SOLDERING TIME
<3 sec/side
SOLDER
ø0.5-0.8mm
B
PRESSURE
SOLDERING IRON


PRECAUTIONS
SOLDERING IRON
CORRECT
COPPER TRACK
SOLDERING IRON
CHIP COMPONENT


EXAMPLES
CORRECT
SOLDERING IRON
NO!

ESD

GB WARNING

All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD).
Careless handling during repair can reduce life drastically.
When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance.
Keep components and tools also at this potential.

F ATTENTION

Tous les IC et beaucoup d'autres semi-conducteurs sont sensibles aux décharges statiques (ESD).
Leur longévité pourrait être considérablement écourtée par le fait qu'aucune précaution n'est prise à leur manipulation.
Lors de réparations, s'assurer de bien être relié au même potentiel que la masse de l'appareil et enfiler le bracelet serti d'une résistance de sécurité.
Veiller à ce que les composants ainsi que les outils que l'on utilise soient également à ce potentiel.

D WARNUNG

Alle ICs und viele andere Halbleiter sind empfindlich gegenüber elektrostatischen Entladungen (ESD).
Unsorgfältige Behandlung im Reparaturfall kan die Lebensdauer drastisch reduzieren.
Veranlassen Sie, dass Sie im Reparaturfall über ein Pulsarmband mit Widerstand verbunden sind mit dem gleichen Potential wie die Masse des Gerätes.
Bauteile und Hilfsmittel auch auf dieses gleiche Potential halten.

NL WAARSCHUWING

Alle IC's en vele andere halfgeleiders zijn gevoelig voor electrostatische ontladingen (ESD).
Onzorgvuldig behandelen tijdens reparatie kan de levensduur drastisch doen verminderen.
Zorg ervoor dat u tijdens reparatie via een polsband met weerstand verbonden bent met hetzelfde potentiaal als de massa van het apparaat.
Houd componenten en hulpmiddelen ook op ditzelfde potentiaal.

I AVVERTIMENTO

Tutti IC e parecchi semi-conduttori sono sensibili alle scariche statiche (ESD).
La loro longevità potrebbe essere fortemente ridatta in caso di non osservazione della più grande cauzione alla loro manipolazione.
Durante le riparazioni occorre quindi essere collegato allo stesso potenziale che quello della massa dell'apparecchio tramite un braccialetto a resistenza.
Assicurarsi che i componenti e anche gli utensili con quali si lavora siano anche a questo potenziale.

GB

Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified, be used.

NL

Veiligheidsbepalingen vereisen, dat het apparaat bij reparatie in zijn oorspronkelijke toestand wordt teruggebracht en dat onderdelen, identiek aan de gespecificeerde, worden toegepast.

F

Les normes de sécurité exigent que l'appareil soit remis à l'état d'origine et que soient utiliséés les piéces de rechange identiques à celles spécifiées.

D

Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten. Der Original zustand des Geräts darf nicht verändert werden; für Reparaturen sind Original-Ersatzteile zu verwenden.

I

Le norme di sicurezza esigono che l'apparecchio venga rimesso nelle condizioni originali e che siano utilizzati i pezzi di ricambio identici a quelli specificati.

"After servicing and before returning set to customer perform a leakage current measurement test from all exposed metal parts to earth ground to assure no shock hazard exist. The leakage current must not exceed 0.5mA."

"Pour votre sécurité, ces documents doivent être utilisés par des spécialistes agréés, seuls habilités à réparer votre appareil en panne".

CLASS 1
LASER PRODUCT
3122 110 03420

GB Warning !

Invisible laser radiation when open.
Avoid direct exposure to beam.

S Varning !

Osynlig laserstrålning när apparaten är öppnad och spärren är urkopplad. Betrakta ej strålen.

SF Varoitus !

Avatussa laitteessa ja suojalukituksen ohitettaessa olet alttiina näkymättömälle laserisäteilylle. Älä katso säteeseen!

DK Advarse !

Usynlig laserstråling ved åbning når sikkerhedsafbrydere er ude af funktion. Undgå udsaettelse for stråling.

GENERAL INFORMATION

SAFETY INFORMATION

**IMPORTANT:
PLEASE NOTE THAT THE VOLTAGE SELECTOR LOCATED AT THE REAR OF THIS SYSTEM IS PRESET AT 220V FROM THE FACTORY. FOR COUNTRIES THAT OPERATE AT 110V, PLEASE ADJUST TO 110V BEFORE YOU SWITCH ON THE SYSTEM.**

General Information

- ***The typeplate (which contains the serial number) is located at the rear of the system.***
- ***Recording is permissible if copyright or other rights of third parties are not infringed.***

Environmental Information

All unnecessary packaging has been omitted. We have tried to make the packaging easy to separate into three materials: cardboard (box), polystyrene foam (buffer) and polyethylene (bags, protective foam sheet).

Your system consists of materials which can be recycled and reused if disassembled by a specialized company. Please observe the local regulations regarding the disposal of packaging materials, exhausted batteries and old equipment.

Accessories *(Supplied)*

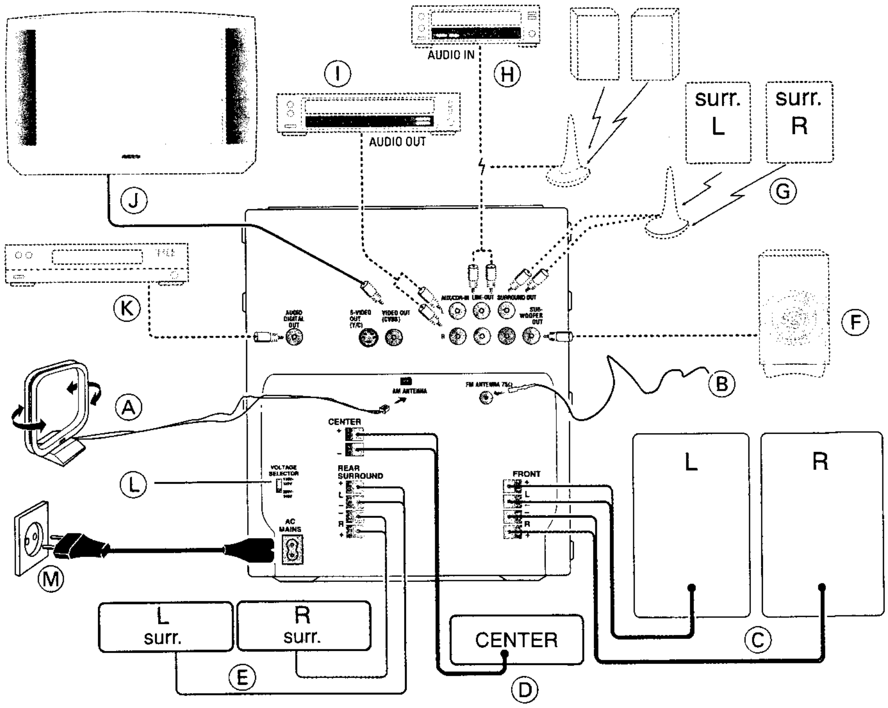
- Remote control
- Batteries (two AA size) for remote control
- AM loop antenna1
- FM wire antenna
- AC power cord
- *For model FW-D5 only*
  CS-05 speaker package (includes one pair of surround speakers and one centre speaker)
- CVBS cable cinch

Safety Information

- Before operating the system, check that the operating voltage indicated on the typeplate (or the voltage indication beside the voltage selector) of your system is identical with the voltage of your local power supply. If not, please consult your dealer. The typeplate is located at the rear of your system.
- When the system is switched on, do not move it around.
- Place the system on a solid base (e.g. a cabinet).
- Place the system in a location with adequate ventilation to prevent internal heat build-up in your system. Allow at least 10 cm (4 inches) clearance from the rear and the top of the unit and 5 cm (2 inches) from each side.
- Do not place the system on soft carpet that will cover the ventilation hole at the bottom.
- Do not expose the system to excessive moisture, rain, sand or heat sources.
- Under no circumstances should you repair the system yourself, as this will invalidate the warranty!
- If the system is brought directly from a cold to a warm location, or is placed in a very damp room, moisture may condense on the lens of the CD/DVD unit inside the system. Should this occur, the player will not operate normally. Leave the power on for about one hour with no disc in the system until normal playback is possible.
- Electrostatic discharge may cause unexpected problems. See whether these problems disappear if you unplug the AC power cord and plug it in again after a few seconds.
- **To disconnect the system from the power supply completely, remove the AC power plug from the wall socket.**

PREPARATION

Rear Connections



Ⓐ AM Loop Antenna Connection

Connect the supplied loop antenna to the AM ANTENNA terminal. Place the AM loop antenna far away from the system and adjust its position for the best reception.

Ⓑ FM Wire Antenna Connection

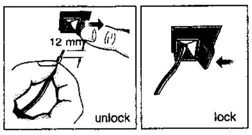
Connect the supplied FM wire antenna to the FM ANTENNA 75 Ω terminal. Adjust the position of the FM antenna for the best reception.

Outdoor Antenna

For better FM stereo reception connect an outdoor FM antenna to the FM ANTENNA 75 Ω terminal using a 75 Ω coaxial wire.

Ⓒ Speakers Connection

- Connect the right speaker to Front terminal R, with the coloured wire to + and the black wire to –.
- Connect the left speaker to Front terminal L, with the coloured wire to + and the black wire to –.
- Clip the stripped portion of the speaker wire as shown.



CAUTION:

- *For optimal sound performance, it is recommended to use the supplied speakers.*
- *Do not connect more than one speaker to any one pair of +/– speaker terminals.*
- *Do not connect speakers with impedance lower than the speakers supplied. Please refer to the SPECIFICATIONS section of this manual.*

Ⓓ Centre Speaker Connection *(for model FW-D5 only)*

Connect the black (non-marked) wires to the black CENTER terminal and the blue (marked wires) to the blue CENTER terminal.

Ⓔ Rear Surround Speakers' Connection *(for model FW-D5 only)*

Connect the black (non-marked) wires to the black REAR SURROUND terminals and the coloured (marked) wires to the grey REAR SURROUND terminals.

Ⓕ Subwoofer Out Connection

Connect the optional active subwoofer to the SUBWOOFER OUT terminal. The subwoofer reproduces just the low bass sound effect (e.g. explosions, the rumble of spaceships, etc.). Be sure to follow the instructions supplied with the subwoofer.

Ⓖ Wireless Surround Out Connection *(for model FW-D5 only)*

You may connect the transmitter of the wireless rear speakers (not supplied) to the SURROUND OUT terminal.

Note:

- *Availability of a wireless transmitter and its peripherals are subjected to the approval of local authorities. Please check with the respective local safety or approving authority.*

Ⓗ Line Out Connection *(wireless ready)*

You can connect the audio left and right LINE OUT terminals to a optional CD Recorder's ANALOGUE IN terminals. This allows you to record in an analogue format.

You can also install additional optional front active speakers away from the system (e.g. in another room) to reduce the inconvenience of running long speaker wires across rooms. You can place as many remote speakers as you like provided they operate at the same radio frequency. Connect the wireless radio frequency transmitter to the LINE OUT terminals. Place the active speakers at your preferred location. Be sure to follow the instructions supplied with the active speakers.

Ⓘ Connecting other equipment to your system

You can connect the audio left and right OUT terminals of a TV, VCR, Laser Disc player, DVD player or CD Recorder to the AUX/CDR IN terminals at the rear of the system.

Ⓙ Video Out Connection

Connect the VIDEO OUT (CVBS) terminal at the rear of the system to the TV or VCR VIDEO IN terminal for viewing or recording.

Note:

- *You can also choose to connect the S-VIDEO OUT (Y/C) terminal at the rear of the system to the S-VIDEO IN of the TV using an optional S-VIDEO cable.*

Ⓚ Audio Digital Out Connection

You can record the digital sound from the CD/DVD, through this output, on any audio equipment with digital input (e.g. CD Recorder, Digital Audio Tape (DAT) deck, Digital to Analogue Converter and Digital Signal Processor).

Connect one end of the cinch cable (not supplied) to the DIGITAL OUT socket and the other end to the audio equipment's digital input. When connecting the cinch cable, make sure it is fully inserted.

Ⓛ Adjusting the Operating Voltage *(not available for all versions)*

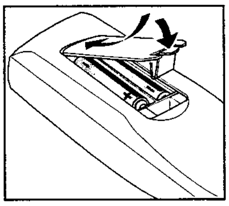
Before connecting the AC power cord to a wall outlet, make sure that the voltage selector at the rear of the system is set to the local power line voltage. If not, reset the selector before connecting to the wall outlet.

Ⓜ AC Power Supply

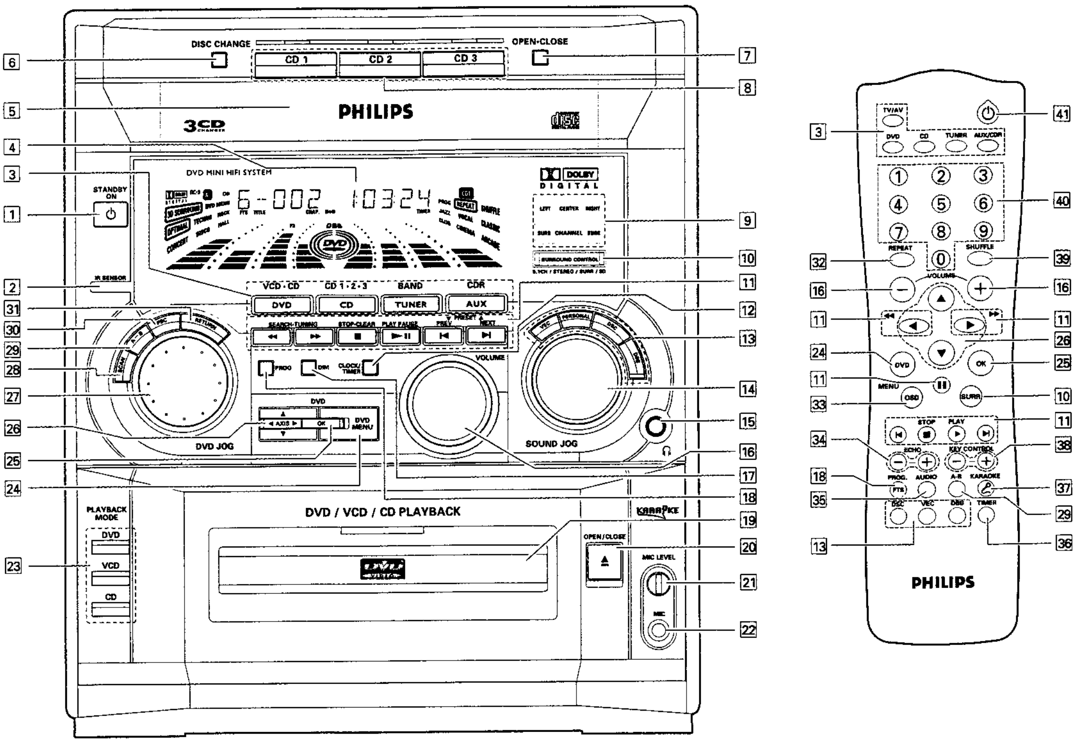
After all other connections have been made, connect the AC power cord to the system and to the wall outlet.

Inserting batteries into the Remote Control

- Insert the batteries (Type R06 or AA) into the remote control as shown in the battery compartment.



- To avoid damage from possible battery leakage, remove dead batteries or batteries that will not be used for a long time. For replacement, use type R06 or AA batteries.


DISC CHANGE
OPEN•CLOSE
CD 1
CD 2
CD 3
PHILIPS
3CD
DVD MINI HIFI SYSTEM
STANDBY ON
IR SENSOR
VCD-CD
CD 1-2-3
BAND
CDR
DVD
CD
TUNER
AUX
SEARCH-TUNING
STOP-CLEAR
PLAY PAUSE
PREV
NEXT
PROG
DIM
CLOCK/TIMER
VOLUME
DVD JOG
DVD MENU
OK
SOUND JOG
DVD / VCD / CD PLAYBACK
PLAYBACK MODE
DVD
VCD
CD
KARAOKE
OPEN/CLOSE
MIC LEVEL
MIC
TV/AV
DVD
CD
TUNER
AUX/CDR
REPEAT
SHUFFLE
VOLUME
DVD
OK
MENU
OSD
SURR
STOP
PLAY
ECHO
KEY CONTROL
PROG
AUDIO
A-B
KARAOKE
DSC
VEC
DBB
TIMER
PHILIPS
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41

Controls on the system and remote control

1 **STANDBY ON**
- to switch the system on or to standby mode.
- to use for EASY SET.

2 **IR SENSOR**
- sensor for the infrared remote control.

3 **SOURCE** – to select the following:

DVD / (VCD•CD)
- to select DVD mode. When in DVD mode, you can play DVD, VCD or CD.

CD / (CD 1•2•3)
- to select CD mode. When CD playback is stopped, press to select disc tray 1, 2 or 3.

TUNER / (BAND)
- to select Tuner mode. When in tuner mode, press to select the waveband: FM or MW.

AUX / (CDR)
- to select sound from an external source (e.g. TV, VCR, Laser Disc player, DVD player or CD Recorder). When in AUX mode, press to select either AUX or CDR.

TV/AV *(only on the remote control)*
- to select TV or Video mode.

4 **DISPLAY SCREEN**
- to view the current setting of the system.

5 **CD CAROUSEL TRAY**

6 **DISC CHANGE**
- to change CD(s).

7 **OPEN•CLOSE**
- to open or close the CD carousel tray.

8 **CD 1 / CD 2 / CD 3 (CD DIRECT PLAY)**
- to select a CD tray for playback.

9 **SURROUND SOUND DISPLAY PANEL** *(for model FW-D5 only)*
- to view the selected Surround setting.

10 **SURROUND CONTROL (SURR)** *(for model FW-D5 only)*
- to select Multichannel Sound, Stereo, Surround or 3D Sound mode for DVD operation only.

11 **MODE SELECTION**

SEARCH•TUNING ◀◀ ▶▶ (◀ ▶)

for DVD/VCD/CD
- to search backward/forward *(except for CD playback in DVD-VIDEO tray).*

for TUNER
- to tune to a lower or higher radio frequency.

for CLOCK *(on the system only)*
- to set the hour.

for TV VOL.
- to adjust the TV volume if the remote operates your TV.

STOP•CLEAR ■

for DVD/VCD/CD
- to stop playback *(in DVD mode only).*

for CD
- to stop playback or to clear a programme *(in CD mode only).*

for TUNER
- to stop programming.

for DEMO *(on the system only)*
- to start or stop demonstration mode.

PLAY PAUSE ▶II

for DVD/VCD/CD
- to start or interrupt playback.

for DVD/VCD
- to watch a still picture.

I◀ PREV / NEXT ▶I (PRESET)

for DVD/VCD/CD
- to skip to the beginning of the current, previous, or next title or track.

for VCD only
- to select next or previous MENU *(for VCD with PBC on).*
- to select next or previous VCD track during playback *(for VCD with PBC off).*

for TUNER
- to select a preset radio station in memory.

for CLOCK *(on the system only)*
- to set the minute .

12 **CLOCK/TIMER**
- to view the clock, set the clock or set the timer.

13 **SOUND CONTROL**
- to select the desired sound feature : VEC, PERSONAL, DSC or DBB.

14 **SOUND JOG**
- to select the desired sound effect of VEC/PERSONAL/DSC/DBB setting. You must select the respective sound feature first.

VEC
- to select the desired Virtual Environment Control effect : HALL, CLUB, DISCO, CINEMA, CONCERT or ARCADE.

PERSONAL
- to select up to 6 personal preferred Spectrum Analyser settings : PERSONAL 1-6.

DSC
- to select the desired Digital Sound Control effect : OPTIMAL, CLASSIC, TECHNO, VOCAL, ROCK or JAZZ.

DBB
- to select a Dynamic Bass Boost level : BEAT, PUNCH or BLAST.

15 **🎧**
- to connect headphones.

16 **VOLUME**
- to increase or decrease the volume.

17 **DIM**
- to select brightness for the display screen : DIM 1, DIM 2, DIM3 or DIM OFF.

18 **PROGram (FTS- Favourite track selection)**
for DVD/VCD/CD
- to programme disc tracks.

for TUNER
- to programme preset radio stations.

for CLOCK *(on the system only)*
- to select 12 or 24 hour in clock setting mode.

19 **DVD-VIDEO DISC TRAY**

20 **OPEN/CLOSE ≜**
- to open or close the DVD-VIDEO tray.

21 **MIC LEVEL** *(not available for all versions)*
- to adjust the mixing level for karaoke in DVD mode only.

22 **MIC** *(not available for all versions)*
- to connect microphone jack.

23 **PLAYBACK MODE**
- to view the selected playback mode : DVD, VCD or CD.

24 **DVD MENU**
- to access the DVD disc menu.

25 **OK**
- to confirm the selection.

26 **AXIS (◀▶▲▼)**
- to select the direction of cursor movement : up/down or left/right.
- *(on the remote control only)* to select movement of cursor: left, right, up or down.

27 **DVD JOG**
- to move the cursor up/down or left/right. You must select the AXIS movement direction first.

28 **SCAN**
for DVD
- to playback the first 10 seconds of each chapter within a title.

for VCD/CD
- to playback the first 10 seconds of each track.

29 **A - B** *(in DVD mode only)*
- to playback a certain scene or passage of a disc repeatedly.
- to repeat playback a Chapter/Index, Title/Track or Disc.

30 **PBC** (PLAYBACK CONTROL)
- to switch on or off PBC mode *(for VCD version 2.0 only)*.

31 **RETURN**
- to return to the previous MENU level during playback.

32 **REPEAT** *(in CD mode only)*
- to repeat a disc track, a disc, or all available discs.

33 **OSD MENU (ON SCREEN DISPLAY)**
- to switch on or off the on screen display on the TV screen.

34 **ECHO −/+** *(not available for all versions)*
- to adjust the echo level for karaoke.

35 **AUDIO**
- to select different audio languages available in the DVD disc.

36 **TIMER**
- to switch on or off the timer.

37 **KARAOKE 🎤** *(not available for all versions)*
- to switch the Karaoke features ON/OFF mode.

38 **KEY CONTROL −/+** *(not available for all versions)*
- to adjust the key to suit your vocal range.

39 **SHUFFLE**
- to play all the available discs and their tracks in random order.

40 **DIGIT 0 - 9**
(numbers consisting more than two figures must be keyed in within 2 seconds.)
for DVD/VCD/CD
- to key in a disc title or track for playback or programming.

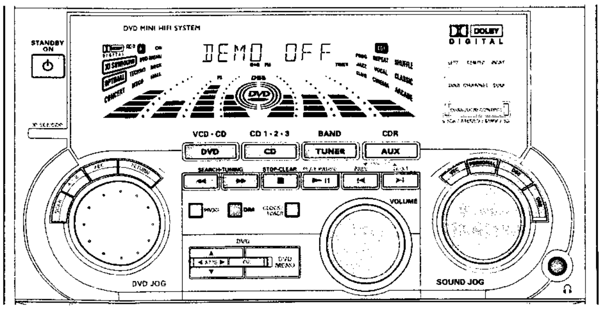
for VCD with PBC on only
- to select a track.

for TUNER
- to key in a preset radio station.

41 ⏻
- to switch the system to standby mode.

Notes for remote control:
- ***First select the source you wish to control by pressing one of the source select keys on the remote control (e.g. DVD, TUNER, etc.).***
- ***Then select the desired function (▶, ⏮, ⏭, etc.).***

OPERATING THE SYSTEM



Important:
Before you operate the system, complete the preparation procedures.

Demonstration mode

The system has a demonstration mode that shows the various features offered by the system. ***When the system is switched on for the first time, the demonstration mode will start automatically.***

Notes:
- *During the demonstration, if you press any source (or standby-on) button, the system will switch to the respective mode (or standby).*
- *When the system is switched to standby mode, the demonstration will resume 5 seconds later.*

To stop the demonstration mode
- Press and hold ■ *(on the system only)* for ***5 seconds*** when the system is in demonstration mode.
  → The demonstration will stop.
  → "DEMO OFF" will be displayed.
  → The system will switch to standby mode.

Notes:
- *When the system is switched on from the main power outlet, the CD carousel tray may open and close again to initialize the set.*
- *Even though the AC power cord is removed from and reconnected to the wall socket, the demonstration will remain off until it is switched on again.*

To start the demonstration mode
- Press and hold ■ *(on the system only)* for ***5 seconds*** when the system is in standby mode.
  → The demonstration will begin.

Easy Set

EASY SET allows you to store all available radio stations automatically.

- Press and hold **STANDBY ON** *(on the system only)* for ***5 seconds***; when the system is in standby or demonstration mode.
  → "EASY SET" will be displayed, and followed by "TUNER" and then "AUTO".
  → EASY SET will start searching for all radio on FM band and then followed by radio stations on MW band.
  → All available radio stations with sufficient signal strength will be stored. Up to 40 presets may be stored.

Notes:
- *EASY SET will start with the FM band, if there are still presets available, the system will continue to store the MW band.*
- *When EASY SET is used, all previously stored radio stations will be replaced.*
- *The last preset radio station will appear on the display when EASY SET is completed.*

Switching the system ON

- Press **DVD**, **CD**, **TUNER** or **AUX**.

You can also switch on the system by pressing any one of the CD DIRECT PLAY buttons.

Switching the system to standby mode

- Press **STANDBY ON** or ⏻ on the remote control.
  → The system will switch to standby mode.

Selecting the Source

- Press the desired source selection button: **DVD**, **CD**, **TUNER** or **AUX**.
  → The display indicates the selected source.

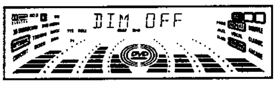
Note:
- *For an external source, make sure you have connected the audio left and right OUT terminals of the external equipment (TV, VCR, Laser Disc player, DVD player or CD Recorder) to the AUX/CDR IN terminals.*

Dim mode

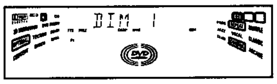
You can select the desired brightness for the display.

- Press **DIM** to select DIM 1, DIM 2, DIM 3 or DIM OFF display mode.
  → The DIM appears on the display.
  → "DIM 1", "DIM 2", "DIM 3" or "DIM OFF" will be displayed depending on the mode selected.

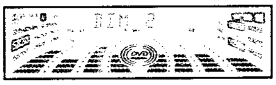
DIM OFF - normal brightness with Spectrum Analyser On



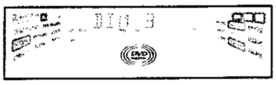
DIM 1 - normal brightness with Spectrum Analyser Off



DIM 2 - half brightness with Spectrum Analyser On



DIM 3 - half brightness with Spectrum Analyser Off and all LEDs on the system will be switched off.



Volume Control

Adjust **VOLUME** to increase or decrease the sound level.

For Personal Listening

Connect the headphones plug to the 🎧 socket at the front of the system. The speakers will be muted.

Sound Control

For Optimal sound listening, you can only select one of the following sound controls at a time : VEC, PERSONAL or DSC.

VIRTUAL ENVIRONMENT CONTROL (VEC)

The VEC feature enables you to adjust the system to select a type of environment.

1. Press to select the **VEC** feature.
2. Adjust the **JOG** to select the desired VEC setting : HALL, CLUB, DISCO, CINEMA, CONCERT or ARCADE.
   → The selected environment is encircled.
   → "HALL, CLUB, DISCO, CINEMA, CONCERT or ARCADE" will be displayed.

PERSONAL SOUND

You can store up to 6 personal settings.

1. Press to select the **PERSONAL** feature.
2. Adjust the **JOG** to select the desired Personal setting.
   → The selected personal setting number will appear on the display.
   → If no name has been stored previously, "PERSONAL X" will be displayed. "X" is the setting number.

Personal Setting

You can adjust the personal setting to your desired level with the JOG control.

1. Press and hold **PERSONAL** for about ***5 seconds*** to switch on the personal setting mode.
   → "SELECT PRESET NUMBER" will be displayed.
2. Adjust the **JOG** to select the desired preset number for personal setting and press ▶▶ to confirm the selection.
   → "ADAPT LOW FREQ LEVEL" will be displayed.
3. Adjust the **JOG** to select the desired Spectrum Analyser band level for low frequency.
   → The level will increase or decrease between +3 and −3.
4. Press ▶▶ to confirm the selection.
   → "ADAPT MID FREQ LEVEL" will be displayed, followed by "ADAPT HIGH FREQ LEVEL".

- Repeat ***step 3 - 4*** to select the desired middle and high frequencies of the Spectrum Analyser band levels.

5. You can edit the name for the personal setting.
   → The first character of the setting name will be flashing.
6. Adjust the **JOG** to select the desired letter, number or symbol.
   → "A to Z", "0 to 9" or "*, -, +, \, /, _".
7. Press ▶▶ to confirm the selection.
   → The next character for editing will be flashing.

- Repeat ***steps 6 - 7*** to store up to 10 characters.

8. To store the setting, press **PERSONAL** again.

- ***Before storing the setting, you can press ◀◀ to retrace the steps.***
- ***To exit without storing the setting, press ■.***

Notes:

- *During personal setting, if no button is pressed within 90 seconds, the system will exit personal setting mode automatically.*
- *It is not possible to adjust the DBB level during personal setting, "USE JOG" will be displayed.*

DIGITAL SOUND CONTROL (DSC)

The DSC feature enables you to adjust the system to suit your type of music.

1. Press to select the **DSC** feature.
2. Adjust the **JOG** to select the desired DSC setting : OPTIMAL, CLASSIC, TECHNO, VOCAL, ROCK or JAZZ.
   → The selected digital sound is encircled.
   → "OPTIMAL, CLASSIC, TECHNO, VOCAL, ROCK or JAZZ" will be displayed.

Note:

- *For a neutral setting, select CLASSIC.*

DYNAMIC BASS BOOST (DBB)

There are three DBB settings to enhance the bass response.

- Press **DBB** briefly to select a bass boost level.
  → The DBB button wll be lit.
  → "BEAT", "PUNCH" or "BLAST" will be displayed.

To switch off DBB

- Press **DBB** briefly until "DBB OFF" is displayed.

Note:

- *Some CDs might be recorded in high modulation, which causes a distortion at high volume. If this occurs, switch off DBB or reduce the volume.*

Automatic DSC-DBB / VEC-DBB selection

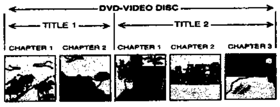
The best DBB setting is generated automatically for each DSC or VEC selection. You can manually select the DBB setting that best suits your listening environment.

General Information

- Digital video discs provide perfect digital, studio-quality pictures; three dimensional digital; multi-channel audio; story sequences screened from your choice of camera angle; sound tracks in as many as eight languages; and up to 32 subtitles if available on disc.
- DVD-Video uses state-of-the-art MPEG2 data compression technology to register an entire movie on the single 5-inch disc. DVD's variable bitrate compression, running up to 9.8 Mbits/second, captures even the most complex pictures in their original quality.
- The crystal-clear digital pictures have a horizontal resolution of over 500 lines, with 720 pixels (picture elements) to each line. This resolution is more than double that of VHS, superior to Laser Disc, and entirely comparable with digital masters made in recording studios.
- In addition to the DVD-Video discs, you will be able to play all Video CDs and Audio CDs (including finalised CD Recordable and CD Rewritable).

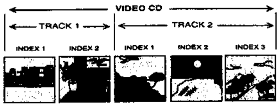
DVD-Video

You will recognise DVD-Video discs by the logo shown at right. Depending on the material on the disc (a movie, video clips, a drama series, etc.) the disc may have one or more Titles. Each Title may have one or more Chapters. To make playback easy and convenient, your player lets you select Titles and Chapters.


DVD-VIDEO DISC
TITLE 1
TITLE 2
CHAPTER 1
CHAPTER 2
CHAPTER 1
CHAPTER 2
CHAPTER 3

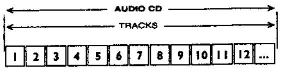
Video CD

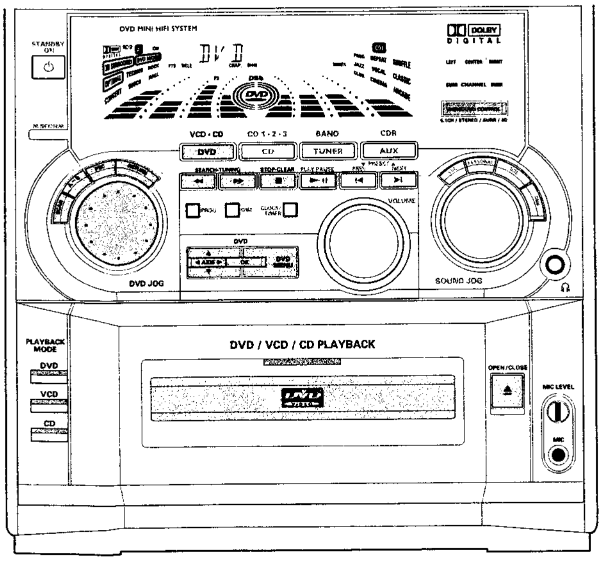
You will recognise Video CDs by the logo shown at right. Depending on the material on the disc (a movie, video clips, a drama series, etc.) the disc may have one or more tracks. Tracks may have one or more indexes, as indicated on the disc case. To make playback easy and convenient, your player lets you select tracks and indexes.


VIDEO CD
TRACK 1
TRACK 2
INDEX 1
INDEX 2
INDEX 1
INDEX 2
INDEX 3

Audio CD

Audio CDs contain music tracks only. You will recognise CDs by their logo which is shown at right. You can play them in conventional style through a stereo system, using the keys on the remote control and/or front panel, or via the TV using the On-Screen Display (OSD).


AUDIO CD
TRACKS
1
2
3
4
5
6
7
8
9
10
11
12
...


DVD MINI HIFI SYSTEM
STANDBY ON
DOLBY DIGITAL
VCD • CD
CD 1•2•3
BAND
CDR
DVD
CD
TUNER
AUX
VOLUME
DVD JOG
SOUND JOG
DVD / VCD / CD PLAYBACK
OPEN/CLOSE
MIC LEVEL
MIC
PLAYBACK MODE
DVD
VCD
CD

Surround Setup *(for FW-D5 DVD operation only)*

Multichannel sound

MULTICHANNEL SOUND gives you a completely new listening sensation. You will have the feeling of being in the middle of the action, because sound is coming from everywhere around you. Look for discs with the DOLBY DIGITAL MPEG Multichannel mark which indicates the material is encoded for multichannel surround sound.

Notice that DVDs do not always carry full multichannel surround. To be sure that a disc is multichannel encoded, consult your dealer.

Most ordinary stereo tapes and discs can be replayed using surround sound settings with good results. If the reproduction is distorted in surround mode, switch to normal stereo mode.

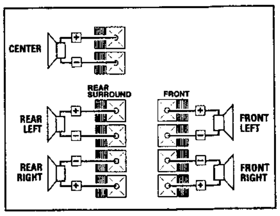
The availability of the various surround sound modes described depends on the number of speakers used and the incoming sound information.

Setting up the Multichannel system

You must set up the system properly in order to enjoy the MULTICHANNEL to the fullest. First, connect the speakers.

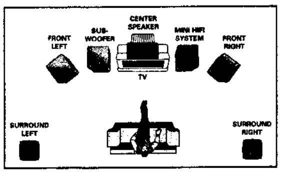
5-Speaker Connection

- ***Front speakers:*** *Connect the front speakers to the FRONT terminals.*
- ***Centre speaker:*** *Connect the centre speaker to the CENTER terminals.*
- ***Rear (surround) speakers:*** *Connect either the wired rear surround speakers or a pair of wireless rear speakers (not supplied) to the SURROUND OUT terminals.*


CENTER
REAR SURROUND
FRONT
REAR LEFT
FRONT LEFT
REAR RIGHT
FRONT RIGHT

Positioning the Speakers

To get the best surround sound effect, place the speakers as follows.



Front Left and Right Speakers
For the best sound, place the Left and Right speakers at an angle of approximately 45 degrees to the listener. If the speakers' magnetic field affects the television picture, increase the distance between the TV and the speakers.

Centre Speaker
For the best sound, place the centre speaker at the same height as the left and right speakers. Place the centre speaker directly above or beneath the television.

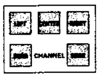
Rear (surround) Speakers
The surround speakers should be placed at normal listening ear level or mounted on the wall at the back of the room. Most important, experiment when placing the surround speakers in order to obtain the best sound.

Switching Surround Control Sound

You can switch through the different surround modes. Note that the possibilities are related to speaker setup as defined.

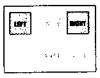
- Press **SURROUND CONTROL** *(or **SURR** on the remote control)* to select : MULTICHANNEL, STEREO, SURROUND or 3D SURROUND mode.
  → The message "DOLBY DIGITAL AC3 5.1 CHANNEL, STEREO, SURROUND or 3D SURROUND" will be displayed.

Multichannel (5.1)



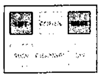
In addition to SURROUND, the surround mode used will be displayed. AC3 must be available on the source material.

Stereo



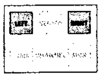
All sound is reproduced and played through the front left and right speakers. This enables standard stereo reproduction.

Surround



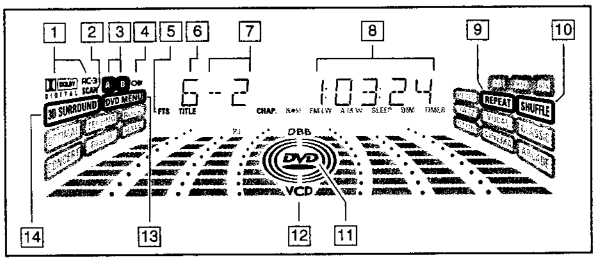
This surround mode enables normal surround sound reproduction with two speakers. Depending on the source material, Dolby Pro Logic or MPEG is reproduced (for connection to another Dolby Pro Logic decoder).

3D Surround



The sound of the rear channel is simulated by the front left and right speakers.

Note:
- *Always refer to OSD when selecting surround control sound. When in stop mode, the player will not display the correct surround selection.*



On Screen Display information

DISPLAY indications

1 AC3 *(for model FW-D5 only)*
- AC-3 active

2 **SCAN**
- SCAN active

3 A B
- Repeat A-B active

4 ●((
- Remote control active (flashing)

5 **FTS**
- Favourite Track Selection active

6 6
- DVD TITLE number

7 -2
- DVD CHAPTER number

8 1:03:24
- TRACK/TOTAL TIME in hours, minutes and seconds

9 **REPEAT**
- REPEAT active

10 **SHUFFLE**
- SHUFFLE active

11 **DVD**
- DVD disc inserted

12 **VCD**
- (Video)CD disc inserted

13 **DVD MENU**
- DVD MENU active

14 **3D SURROUND** *(for model FW-D5 only)*
- 3D SURROUND active

Menu bar/Status window

The status window displays the current status of the player and appears with the first part of the menu bar. (You must activate this in the Features Menu, see Personal Preferences for details).

General

no disc	DVD	VCD	error	**Disc type**
opening	opening	opening	opened	
closing	closing	closing		**Tray status**
blocked				

Temporary feedback field icons

scan	Scan
repeat	Repeat All
title	Repeat Title
track	Repeat Track
chapter	Repeat Chapter
shuffle	Shuffle
shuffle	Shuffle Repeat
A-	Repeat A to end
A-B	Repeat A-B
■	Angle
locked	Child Lock On
safe	Child Safe
resume	Resume
■	Action prohibited

Default screen
The default screen is displayed when the player is in STOP mode. It may contain a 'Status Window' and a 'Temporary Feedback Field'. This screen gives information concerning prohibited actions, playback modes, available angles, etc.

Preparation

NTSC/PAL Setting

Before viewing the DVD or VCD, ensure that the PAL or NTSC setting of the system matches your TV set.

1 Before connecting the system to the power source, press and hold **DVD** and ◀◀ *(on the system only)*. While holding **DVD** and ◀◀, plug in the power cord.
2 After PAL or NTSC appears on the display, release **DVD** and ◀◀ at the same time.
   → The PAL or NTSC that appears on the display indicates the current setting.
- To change the setting, press ▶| within ***3 seconds***.
   → After selected, the set will automatically switch to the last NTSC or PAL setting everytime the DVD or VCD source is selected.

Turning On the power

1 Switch on the TV and select the video in channel to which you connected your DVD-Video player.
2 Press **DVD**.
   → The player display lights and the "Initial Setup" screen appears.

The 'Initial Setup' will only appear the **very first time** you turn on the player. In 'Initial Setup', you may have to set your personal preferences for some of the player's most relevant items. See 'Initial Setup'.

Initial Setup

Manual Operation

After switching on the player for the **very first time**, the 'Initial Setup Screen' will appear.

The menu for the first item to be set is displayed and the first option is highlighted.

1 Use the ▲ or ▼ keys to go through the options in the menu.
   → The icon of the selected option will be highlighted.
2 Press **OK** to confirm your selection and to go to the next menu.

Automatic setting

When settings will be taken from your TV or Home Cinema system, the message 'Auto configuring in process' will appear. Menus for which no settings are available will be displayed. They have to be set manually.

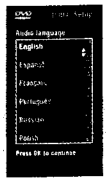
Notes:
- *Preferences have to be set in the order in which the item menus will appear on the screen.*
- *The 'Initial Setup' screen will only disappear after the settings for the last item have been confirmed.*
- *If any keys other than ▲ or ▼ or **OK** are pressed, Ä will appear on the screen.*
- *If the player is switched off while setting personal preferences, all preferences have to be set again after switching the player on again.*

The following items may have to be set in INITIAL SETUP:

Menu language

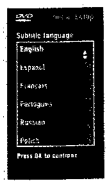
The On Screen Menus will be displayed in the language you choose. You can choose from different languages.

Audio language



The sound will be in the language you choose if it is available on the disc in play. If the language you select is not available, speech will revert to the first spoken language on the disc. You can choose from different languages.

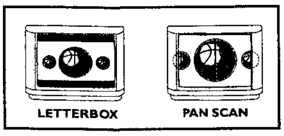
Subtitle language



The subtitles will be in the language you choose if it is available on the disc in play. If the language you select is not available, subtitles will revert to the first subtitle language on the disc. You can choose from different languages.

TV Shape

If you have a wide screen (16:9) TV, select 16:9.
If you have a regular (4:3) TV, select 4:3.
If you have a 4:3 TV, you can also select between:
Letterbox for a 'wide-screen' picture with black bars top and bottom, or Pan Scan, for a full-height picture with the sides trimmed. If a disc has Pan Scan, the picture then moves (scans) horizontally to keep the main action on the screen.

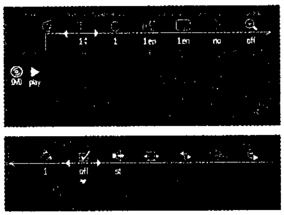


Country

Select your country. This also is used as input for the 'Parental Control' feature. (see 'Access Control')

Note:
- *All these items may have to be set during 'Initial Setup'. After that, they can always be changed in the Personal Preferences Menu.*

OSD Menu



A number of operations can be carried out via the menu bar on the screen. The following functions are available via the menu bar:

V	Personal preference
W	Title/Track
X	Chapter/Index
Y	Audio language
Z	Subtitle language
}	Angle
a	Zoom
c	FTS-Video
d	Sound
e	Picture by Picture
f	Slow motion
g	Fast motion
h	Time search

- The menu bar can be accessed by pressing any of the following keys on the remote control: **OSD MENU** and **AUDIO**.
- The various items can be selected by pressing the **OSD MENU** button, then the ▼ or ▲ keys or by pressing the relevant keys on the remote control.
- Pressing **OSD MENU** while the menu bar is displayed will clear the menu bar from the screen.
- When selecting an item in the menu bar, the selected item will be highlighted and the appropriate cursor keys to operate this item will be displayed below the icon.
- < or > indicates that more items are available at the left/right of the menu bar. Press ◀ or ▶ to select these items.

Personal preferences

You can set your personal preferences for some of the player features : PICTURE, SOUND, LANGUAGE and FEATURE.

General operation:

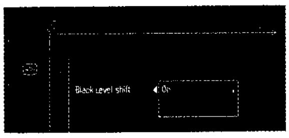
1 Press **OSD MENU** on the remote control.
2 Select V in the menu bar.
   → The Personal Preferences menu appears.
- Use the ◀ or ▶ / ▲ or ▼ keys *(or **DVD JOG**)* to toggle through the menus, sub menus and submenu options.
   → When a menu item is selected, the cursor keys (on the remote control) to operate the item are displayed next to the item.
3 Press **OK** to confirm and return to the main menu.

Note:
- *The DVD JOG can only move within one direction at a time, either up/down or left/right. Press AXIS on the system to select the movement direction before using DVD JOG.*

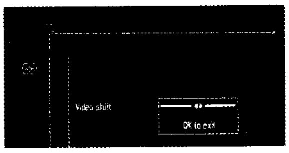
The following items can be adapted:

Picture

- **TV Shape**
  See 'Initial Setup'
- **Black level shift (NTSC only)**
  Adapts the colour dynamics to obtain richer contrasts. Select ON or OFF.



- **Video shift**
  The factory centres the video on your screen. Use this setting to personalize the position of the picture on your TV by scrolling it to the left or right.

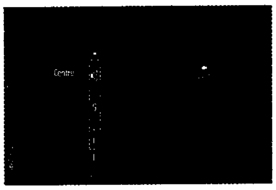


Sound

- **Digital output**
  Factory setting: ALL. This means that both coaxial and optical outputs are switched on. If you are not connecting equipment with a digital input, change the setting to OFF.
  If your equipment doesn't include a digital multi-channel decoder, set the digital output to PCM (Pulse Code Modulation). Both coaxial and optical outputs are switched on.
- **Analogue output**
  Select Stereo, Surround, 3D Sound or Multichannel.

Note:
- *After selecting the desired Analogue Output, if the message appeared on the TV OSD and the system display screen do not match with the setting, press SURROUND CONTROL (or SURR on the remote control) until the selected setting reached.*

- **Night Mode**
  Optimises the dynamics of the sound with low volume playback.
- **Karaoke vocal** *(not available for all versions)*
  Put this setting to ON only when a multi-channel karaoke DVD is being played. The karaoke channels on the disc will then be mixed into a normal stereo sound.
- **Speaker**
  Allows you to select speaker settings, volume balance and delay time and to test the speaker settings.
  Speaker settings are only active on the Analogue Multi-Channel Output (see Appendix - page 30).



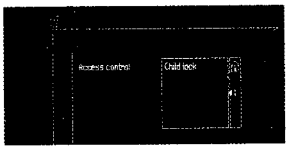
Language

Select the required Menu, Audio and Subtitle language. See 'Initial Setup'. Audio language and Subtitle language can also be adapted via the Menu bar on the screen.

Features

- **Access Control**
  Access Control contains the following features:
  Child Lock...When Child Lock is set to ON, a 4-digit code needs to be entered in order to play discs.
  Parental control...Allows the conditional presentation of DVDs containing Parental Control information. (see 'Access Control')
- **Status Window**
  Displays the current status of the player and is displayed with the menu bar. When disc playback is stopped, it is displayed with the 'Temporary Feedback Field' in the default screen.
  Factory setting is ON. Select OFF to suppress display of the Status Window.
- **Low power Standby** *(not applicable for this model)*
- **PBC (Playback Control)**
  The PBC can be set to ON or OFF *(only applicable for Video CD playback)*

Access control; child lock (DVD and VCD)



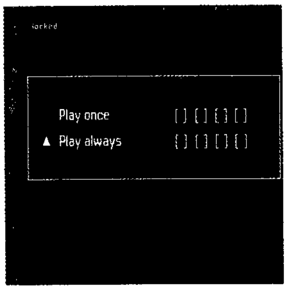
Activating/deactivating the child lock

1 When disc playback is stopped, select ACCESS CONTROL in the features menu using the ▲ or ▼ keys.
2 Enter a 4-digit code of your own choice.
3 Enter the code a second time.
4 Move to Child lock using the ▲ or ▼ keys.
5 Move to LOCK/UNLOCK icons using the ▶ key.
6 Select LOCK icon using the ▲ or ▼ keys.
7 Press **OK** or ◀ to confirm, then press ◀ again to exit the menu.
→ Now unauthorised discs will not be played unless the 4-digit code is entered.
8 Select UNLOCK icon to deactivate the Child Lock.

Note:
- *Confirmation of the 4-digit code is necessary when the code is entered for the very first time, changed or cancelled.*

Authorising discs

- Insert the disc. See 'Loading disc'.
  → The 'child protect' screen will appear.



You will be asked to enter your secret code for 'Play Once 'or 'Play Always.' If you select 'Play Once', the disc can be played as long as it is in the player and the player is ON. If you select 'Play Always', the disc will become child safe (authorised) and can always be played, even if the Child Lock is set to ON.

Notes:
- *The player memory maintains a list of 50 authorised ('Child safe') disc titles. A disc will be placed in the list when 'Play Always' is selected in the 'child protect' screen. Each time a 'child safe' disc is played, it will be placed on top of the list. When the list is full and a new disc is added, the last disc in the list will be removed from the list.*
- *Double sided DVDs may have a different ID for each side. In order to make the disc 'child safe', each side has to be authorised.*
- *Multi-volume VCDs may have a different ID for each volume. In order to make the complete set 'child safe', each volume has to be authorised.*

DeAuthorising discs

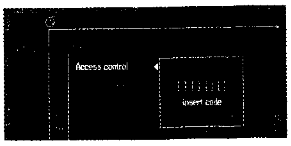
- Insert the disc. See 'Loading disc'.
  → Playback starts automatically.
- Press ■ while { is visible.
  → The I will appear and the disc is now deauthorised.

Access control; Parental control (DVD-Video only)

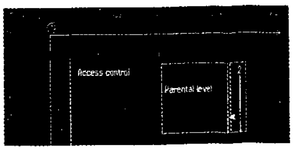
Movies on DVDs may contain scenes not suitable for children. Therefore, disc may contain 'Parental Control' information which applies to the complete disc or to certain scenes on the disc. These scenes are rated from 1 to 8, and alternative, more suitable scenes are available on the disc. Ratings are country dependent. The 'Parental Control' feature allows you to prevent discs from being played by your children or to have certain discs played with alternative scenes.

Activating/Deactivating Parental Control

1 When disc playback is stopped, select ACCESS CONTROL in the Features menu using the ▲ or ▼ keys.
2 Enter your 4-digit code. If necessary, enter the code a second time.



3 Move to Parental Control using the ▲ or ▼ keys.



4 Move to VALUE ADJUSTMENT (1-8) using the ▶ key.
5 Then use the ▲ or ▼ keys or the **digit keys (0-9)** on the remote control to select a rating from 1 to 8 for the disc inserted.

Rating 0 (displayed as '– –'):
Parental Control is not activated. The Disc will be played in full.

Ratings 1 to 8:
The disc contains scenes not suitable for children. If you set a rating for the player, all scenes with the same rating or lower will be played. Higher rated scenes will not be played unless an alternative is available on the disc. The alternative must have the same rating or a lower one. If no suitable alternative is found, play will stop and the 4-digit code has to be entered.

6 Press **OK** or ◀ to confirm, then press ◀ again to exit the menu.

Country

1 When disc playback is stopped, select ACCESS CONTROL in the Features menu using the ▲ or ▼ keys.
2 Enter the 4-digit code.
3 Move to CHANGE COUNTRY using the ▼ key.
4 Press the ▶ key.
5 Select a country using ▲ or ▼.
6 Press **OK** or ◀ to confirm, then press ◀ again to exit the menu.

Changing the 4-digit code

1 When disc playback is stopped, select ACCESS CONTROL in the Features menu using the ▲ or ▼ keys.
2 Enter the old code.
3 Move to CHANGE CODE using the ▼ key.
4 Press the ▶ key.
5 Enter the new 4-digit code.
6 Enter the code a second time and reconfirm by pressing **OK**.
7 Press ◀ to exit the menu.

Note:
– *If you forget your 4 digit code, it can be cancelled by pressing 9 four times in the 'Access Control' dialog. You can then enter a new code (twice!) as described above.*

Parental Control Disclaimer

This DVD player features the PARENTAL CONTROL system which is intended to activate when playing DVD discs made with certain software coding. This is according to technical standards adopted by the set maker and disc content industries.

Please note that the PARENTAL CONTROL system will not operate if the DVD disc does not have the appropriate software coding. Also note that at the time of release of this DVD player, certain aspects of the said technical standards had not been fully settled among the set maker and the disc content industries.

On this basis, Philips cannot warrant functioning of the PARENTAL CONTROL system and disclaims any liability of unintended watching of disc content.

If in doubt, please check the system with the disc before you allow children access or apply to the relevant disc publisher for more information.

Operation

Loading discs

1 Press **OPEN/CLOSE ⏏** on the front of the player. The disc tray opens.
2 Load your chosen disc in the tray, label side up (also when a double sided DVD is inserted). Make sure it is sitting properly in the correct recess.
3 Gently push the tray, or press **OPEN/ CLOSE ⏏** to close the tray.
→ "READ" appears in the status window and on the player display, and playback starts automatically.

Notes:
– *If 'Child Lock' is set to ON and the disc inserted is not in the 'child safe' list (not authorised), the 4-digit code must be entered and/or the disc must be authorised. (see 'Access Control')*
– *The DVD tray will open or close only when the system is in DVD mode.*

Playing a DVD

Playing a title

1 After inserting the disc and closing the tray, playback starts automatically.
→ The status window and the display show the type of disc loaded, as well as information about the disc's contents and playing time.
- The disc may invite you to select an item from a menu. If the selections are numbered, press the appropriate numerical key; if not, use the ◀ or ▶ / ▲ or ▼ keys to highlight your selection, then press **OK**.
→ The currently playing title and chapter number are shown in the menu bar and display.
→ The elapsed playing time is shown in the status window and the display.
- *For model FW-D5 only* - If required, you can use the **SURROUND CONTROL** *(or **SURR** on the remote control)* key to select Multichannel, Stereo, Surround or 3D-Surround. Play may stop at the end of the Title, and the player may return to the DVD menu. To go on to the next title, press ▶.

2 To stop play at any other time, press ■.
→ The default screen will appear, giving information about the current status of the player.

- You can RESUME play from the point at which you stopped play. Press ▶ (PLAY); when you see the RESUME icon I▶ on the screen, press ▶ (PLAY) again.
→ The RESUME feature applies not only to the disc in the player, but also to the last four discs you have played. Simply reload the disc, press ▶ (PLAY); when you see the RESUME icon I▶ on the screen, press ▶ (PLAY) again.

Note:
– *Since it is usual for DVD movies to be released at different times in different regions of the world, all players have region codes. Discs can have an optional region code. If you load a disc of a different region code into your player, you will see the region code notice on the screen. The disc will not play and should be removed from the player.*

Playing a VCD

Playing a disc

1 After inserting the disc and closing the tray, playback starts automatically.
→ The status window and the display show the type of disc loaded, as well as information about the disc's contents and playing time.
- The disc may invite you to select an item from a menu. If the selections are numbered.
→ The currently playing track number is shown in the menu bar and the display. The elapsed playing time is shown in the status window and the display.
- *For model FW-D5 only* - If required, you can use the **SURROUND CONTROL** *(or **SURR** on the remote control)* key to select Multichannel, Stereo, Surround or 3D-Surround.

2 To stop play at any time, press ■.
→ The default screen will then appear.
- You can RESUME play from the point at which you stopped play. Press ▶ (PLAY); when you see the RESUME icon I▶ on the screen, press ▶ (PLAY) again.
→ The RESUME feature applies not only to the disc in the player, but also to the last four discs you have played. Simply reload the disc, press ▶ (PLAY); when you see the RESUME icon I▶ on the screen, press ▶ (PLAY) again.

Note:
– *When PBC mode is switched on, RESUME play is not available.*

General features

Note:
– *Unless stated otherwise, all operations described are based on remote control operation. A number of operations can also be carried out via the menu bar on the screen.*

Moving to another title/TRACK

When a disc has more than one title or track (which you can see from both the menu bar and the display), you can move to another title/track as follows:

1 Select W (TITLE/TRACK) in the menu bar.
2 Press ▶I briefly during play to select the next title/track.
- Press I◀ briefly during play to return to the beginning of the current title/track. Press I◀ briefly again to step back to the previous title/track.

3 To exit, press ◀ or ▶.

Moving to another chapter/index

When a title has more than one chapter or a track has more than one index (which you can see from the display and on the menu bar), move to another chapter/index as follows:

1 Select X (CHAPTER/INDEX) in the menu bar.
2 Press ▶I briefly during play to select the next chapter/index.
- Press I◀ briefly during play to return to the beginning of the current chapter/ index. Press I◀ twice briefly to step back to the previous chapter/index.
- To go directly to any chapter or index, enter the number using the **digit keys (0-9)**.

3 To exit, press ◀ or ▶.

Note:
– *If the number has more than one digit, press the keys in rapid succession.*

Still Picture and Frame-by-frame playback

1 Select e (PICTURE BY PICTURE) in the menu bar.
2 Use the ▼ key to enter the picture by picture menu.
→ The player will go into PAUSE mode.
3 Use the cursor keys ◀ or ▶ to select the previous or next picture frame.
4 To exit Picture by picture mode, press ▶ (PLAY) or ▲ on the remote control.

Search

1 Select g (FAST MOTION) in the menu bar.
2 Use the ▼ keys to enter the Fast Motion menu.
3 Use the ◀ or ▶ keys to select the required speed: -32, -8 or -4 (backward), or +4, +8, +32 (forward).
4 Select 1 to play at normal speed again.
5 To exit Fast Motion mode, press ▶ (PLAY) or ▲ on the remote control.

To search forward or backward through different speeds, you can also hold down ◀◀ or ▶▶.

Repeat A-B

To repeat a sequence in a title:

- Press Repeat **A-B** at your chosen starting point;
  → A- appears briefly on the screen.
- Press Repeat **A-B** again at your chosen end point;
  → A-B repeat appears briefly on the display, and the repeat sequence begins.
- To exit the sequence, press Repeat **A-B**.

Scan

Plays the first 10 seconds of each chapter/index on the disc.

- Press **SCAN**.
- To continue play at your chosen chapter/index, press **SCAN** again or press ▶ (PLAY) on the remote control.

Shuffle

DVDs

This shuffles the playing order of chapters within a title, if the title has more than one chapter.

- Press **SHUFFLE** during play.
  → SHUFFLE appears on the screen for about two seconds.
- To return to normal play, press **SHUFFLE** again.

VCDs

This shuffles the playing order of the tracks, if the disc has more than one track.

- Press **SHUFFLE** during play.
  → SHUFFLE appears on the screen for about two seconds.
- To return to normal play, press **SHUFFLE** again.

Time search

The Time Search function allows you to start playing at any chosen time on the disc.

1 Select h (TIME SEARCH) in the menu bar.
2 Press ▼.
→ The player will go into PAUSE mode.
→ A time edit box appears on the screen, showing the elapsed playing time of the current disc.
3 Use the **digit keys (0-9)** to enter the required start time. Enter hours, minutes and seconds from right to left in the box.
→ Each time an item has been entered, the next item will be highlighted.
4 Press **OK** to confirm the start time.
→ The time edit box will disappear and play starts from the selected time position on the disc.

Zoom

The Zoom function allows you to enlarge the video image and to pan through the enlarged image.

1 Select a (ZOOM) in the menu bar.
2 Press ▲ or ▼ to activate the ZOOM function and select the required zoom factor: 1.33 or 2 or 4.
→ The player will go into PAUSE mode.
→ The selected zoom factor appears below the Zoom icon in the menu bar and *'Press OK to pan'* appears below the menu bar.
→ The picture will change accordingly.
3 Press **OK** to confirm the selection.
→ The panning icons appear on the screen: ◀ or ▶ / ▲ or ▼ and **OK**.
4 Use the ◀ or ▶ / ▲ or ▼ keys to pan across the screen.
5 When **OK** is pressed only the zoomed picture will be shown on the screen.
6 If you wish to zoom at any moment, press a (ZOOM) and select the required zoom factor as described above.
7 To exit Zoom mode, press ▶ (PLAY), ■ or **OSD MENU**.
→ If you press ▶ (PLAY), playback will resume.

FTS-Video

- The FTS-Video function allows you to store your favourite titles and chapters (DVD) and favourite tracks and indexes (VCD) for a particular disc in the player memory.
- Each FTS programme can contain 20 items (titles, chapters).
- Each time an FTS programme is played it will be placed on top of the list. When the list is full and a new programme is added, the last programme in the list will be removed from the list.
- The selections can be played at any time.
- For VCD, FTS programme is not available whenever PBC mode is switched on.

Storing a FTS-Video Program

1 In STOP mode, select FTS-Video c in the menu bar.
2 Press ▼ to open the menu.
→ The FTS-Video menu appears.
3 Press ◀ or ▶ or **FTS** to select ON or OFF.

Storing titles/tracks

1 Press ▼ to select TITLES/TRACK.
2 Use ◀ or ▶ to select the required title/track.
3 Press **OK** if you wish to store the entire title/track.
→ The title/track number will be added to the list of selections.

Storing chapters/indexes

1 Press ▼ on the selected title/track number.
→ The title/track number will be marked and the highlight moves to the first available chapter/index number for this title/track.
2 Use ◀ or ▶ to select the required chapter/index number.
3 Press **OK** to confirm the selection.
→ The title-chapter/track-index selection will be added to the list of selections.
4 Press **OSD MENU** to exit the FTS-Video c menu.

Erasing a FTS-Video Program

1 In STOP mode, select FTS-Video c in the menu bar.
2 Use ▼ to select PROGRAM.
3 Use ◀ or ▶ to select the required selection number.
4 Press **OK** to erase the selection.
5 Press **OSD MENU** to exit.

If you wish to erase all selections:

1 In STOP mode, select FTS-Video c in the menu bar.
2 Use ▼ to select CLEAR ALL.
3 Press **OK**.
→ All selections will now be erased.
4 Press **OSD MENU** to exit.

Special DVD-features

Checking the contents of DVD : Menus

For titles and chapters, selection menus may be included on the disc. The DVD's menu feature allows you to make selections from these menus.

- Press the appropriate **digit keys (0-9)**; or use the ◀ or ▶ / ▲ or ▼ keys to highlight your selection, then press **OK**.

Title menus

1 Press **DVD MENU**.
→ If the current title has a menu, the menu will appear on the screen. If no menu is present in the title, the disc menu will be displayed.
2 The menu can list camera angles, spoken language and subtitle options, and chapters for the title.
3 To remove the title menu, press **DVD MENU** again.

Disc menu

1 Select W (TITLE/TRACK) in the menu bar, then press **DVD MENU**.
→ The disc menu is displayed.

- To remove the disc menu, select W (TITLE/TRACK) in the menu bar, then press **DVD MENU** again.

Camera Angle

If the disc contains sequences recorded from different camera angles, the angle icon appears, showing the number of available angles and the angle being shown currently. You can then change the camera angle if you wish.

1 Select } (ANGLE) in the menu bar.
2 Use the ▲ or ▼ keys to select the required angle in the angle icon.
→ After a small delay, play changes to the selected angle. The angle icon remains displayed until multiple angles are no longer available.

Changing the audio language

1 Select Y (AUDIO) in the menu bar or press **AUDIO** on the remote control.
2 Press ▲ or ▼ repeatedly to see the different languages.

Disc Change

You can change the outer two discs while the third inner disc is stopped or is playing.

1 Press **DISC CHANGE**.
   → The CD carousel tray slides out.
2 Replace the discs in the left and right disc trays.
- If you wish to change the inner disc during playback, press **DISC CHANGE** again.
   → "DISC CHANGE" will be displayed.
   → The CD will stop playing.
   → The CD carousel tray will close to retrieve the inner CD then open again with the inner CD accessible.

3 Press **OPEN•CLOSE** to close the CD carousel tray.

Selecting a desired track

Selecting a desired track when playback is stopped

1 Press ⏮ or ⏭ *(or* ***Digit 0-9*** *on the remote control)* until the desired track appears on the display.
2 Press ▶ (PLAY) to start playback.
   → The selected track number and elapsed playing time appear on the display.

Selecting a desired track during playback

- Press ⏮ or ⏭ *(or* ***Digit 0-9*** *on the remote control)* until the desired track appears on the display.
   → The selected track number and elapsed playing time appear on the display.
- If you press ⏮ once it will skip to the beginning of the current track and play the track again.

Note:

– Pressing ⏮ during shuffling can only skip to the beginning of the current track.

Searching for a particular passage during playback

- Press and hold ◀◀ or ▶▶ until the desired passage is located.
   → The volume will be reduced.
- Play returns to normal when ◀◀ or ▶▶ is released.

Programming Tracks

Programming tracks of a loaded CD is possible when playback is stopped. The display will indicate the total tracks stored in the programme. Up to 40 tracks can be stored in the memory in any order. When 40 tracks are stored and you attempt to store another track, the display will show "PROGRAM FULL".

1 Load the desired discs in the disc trays.
2 Press **PROG** to start programming.
   → The **PROG** starts flashing.
3 Press the **CD** (CD 1•2•3) or **CD 1/2/3** button to select the disc.
4 Press ⏮ or ⏭ *(or* ***Digit 0-9*** *on the remote control)* to select the desired track.
5 Press **PROG** to store the track.
- Repeat steps ***3*** to ***5*** to store other discs and tracks.

6 Press ■ once to end programming.
   → The total number of tracks programmed and total playing time appear on the display.

Notes:

– If the total playing time is more than "99:59" or if one of the programmed tracks has a number greater than 30, then "- -:- -" appears on the display instead of the total playing time.

– If the system is reading the disc, programming is not possible, "READING" will be displayed and followed by "DISC X" "X" is the current read disc number.

– During programming, if no button is pressed within 20 seconds, the system will exit programme mode automatically.

Reviewing the programme

Reviewing of the programme is possible only when playback is stopped.

1 Press ⏮ or ⏭ repeatedly to review the programmed tracks.
2 Press ■ once to exit review mode.

Playing the programme

1 Press ▶ (PLAY) to start programme playback.
   → "PLAY PROGRAM" will be displayed.
   → The track number and elapsed playing time of the current track will appear on the display.
- If you press **REPEAT** during programme playback, the current track or all programmed tracks will be played repeatedly.
   → "TRACK" or "PROGRAM" will be displayed.
   → The **REPEAT** and **PROG** appear on the display.

2 Press ■ to stop programme playback.

Notes:

– If you press any of the CD DIRECT PLAY buttons, the system will play the selected disc or track and the stored programme will be ignored temporarily. The ***PROG*** *display also will disappear temporarily from the display. It will reappear when playback of the selected disc ends.*

– REPEAT DISC mode is not available when programme playback begins.

Erasing the programme *(when playback is stopped)*

- Press ■.
   → "PROGRAM CLEARED" will be displayed.

Note:

– The programme will be erased when the system is disconnected from the power supply or when the CD carousel tray is opened.

Shuffle *(only on remote control)*

In shuffle mode, the system plays all the available discs and their tracks in random order. Shuffle may be used also when tracks are programmed.

To shuffle all the discs and tracks

1 Press **SHUFFLE**.
   → "SHUFFLE" will be displayed.
   → The **SHUFFLE**, the disc and the track selected at random appear on the display.
- The discs and the tracks will be played in random order until you press ■.
- If you press **REPEAT** during shuffling, the current track or all available discs will be played repeatedly.
   → "TRACK" or "ALL DISC" will be displayed.
   → The **REPEAT** and **SHUFFLE** appear on the display.

2 Press **SHUFFLE** again to resume normal playback.
   → The **SHUFFLE** disappears from the display.

Note:

– REPEAT DISC mode is not available when shuffle is selected.

Repeat *(only on remote control)*

You can play the current track, a disc or all available discs repeatedly.

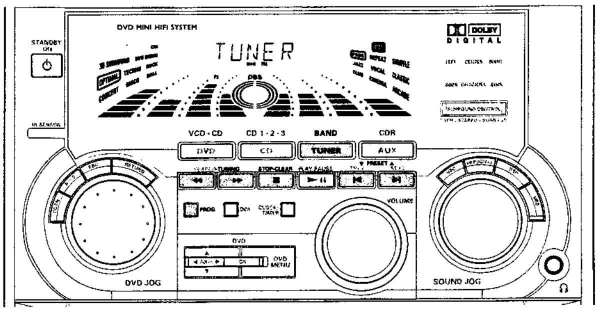
1 Press **REPEAT** on the remote control to select the various repeat modes.
   → "TRACK", "DISC", "ALL DISC" or "OFF" will be displayed.
   → The **REPEAT** appears on the display.
- The selected track, selected disc or all available discs will now be played repeatedly until you press ■.

2 Press **REPEAT** until the "OFF" mode is displayed to resume normal playback.
   → The **REPEAT** disappears from the display.

Notes:

– REPEAT DISC mode is not available during programme play or shuffle mode.

– You can also repeat shuffling a programme.
   → "TRACK" or "PROGRAM" will be displayed.
   → The ***REPEAT, PROG*** *and* ***SHUFFLE*** *appear on the display.*



Note:
- *For 'EASY SET' feature, please refer to page 14.*

Tuning to radio stations

1 Press **TUNER** (BAND) to select TUNER mode.
  → "TUNER" will be displayed.
  A few seconds later, the current radio frequency will be displayed.
2 Press **TUNER** (BAND) again to select the desired waveband : FM or MW.
3 Press ◀◀ or ▶▶ for more than one second, then release.
  → The display will show "SEARCH" until a radio station with sufficient signal strength is found.

- Repeat this procedure until the desired radio station is reached.
- To tune to a weak radio station, briefly press ◀◀ or ▶▶ repeatedly until the display shows the desired frequency and/or when the best reception has been obtained.

Storing Preset Stations

You can store up to 40 radio stations in the memory. When a preset radio station is selected, the preset number appears next to the frequency on the display.

Automatic programming

1 Press **TUNER** (BAND).
2 Press **PROG** for more than one second.
  → The PROG starts flashing and "AUTO" will be displayed.
  → The system will search for every available radio station in the FM waveband first, then search the MW waveband.
  → All available radio stations will be stored automatically. The frequency and preset number will be displayed briefly.
  → The system will stop searching when all the available radio stations are stored or when the memory for 40 preset radio stations is used.
  → The system will remain tuned to the last stored preset radio station.

Notes:
- *You can cancel the automatic programming by pressing PROG or ■ (on the system only).*
- *If you want to reserve a section of preset numbers, for example preset numbers 1 to 9, select preset 10 before starting automatic programming, only the preset numbers 10 to 40 will be programmed.*

Manual programming

1 Press **TUNER** (BAND).
2 Press **TUNER** (BAND) again to select the desired waveband : FM or MW.
3 Press **PROG** for less than one second.
  → The PROG starts flashing.
  → The next available preset number will be displayed for selection.
4 Press ◀◀ or ▶▶ to tune to the desired frequency.
- If you wish to store the radio station to another preset number, press ⏮ or ⏭ *(or **Digit 0-9** on the remote control)* to select the desired preset number.

5 Press **PROG** again.
  → The PROG disappears and the radio station will be stored.
- Repeat ***steps 3 – 5*** to store other preset radio stations.

Notes:
- *When 40 radio stations are stored and you attempt to store another radio station, the display will show "PROGRAM FULL". If you want to change an existing preset number, repeat steps 3 – 5.*

- *You can cancel manual programming by pressing ■ (on the system only).*
- *During programming, if no button is pressed within 20 seconds, the system will exit programme mode automatically.*

Tuning to Preset Radio Stations

- Press ⏮ or ⏭ *(or **Digit 0-9** on the remote control)* to select the desired preset number.
  → The preset number, radio frequency, and waveband appear on the display.

Changing the MW tuning grid

(not available for all versions)

The frequency step can be changed if necessary. In North and South America, the frequency step between adjacent channels in the MW band is 10 kHz. In other parts of the world, it is 9 kHz. The frequency step presetted in the factory is 9 kHz.

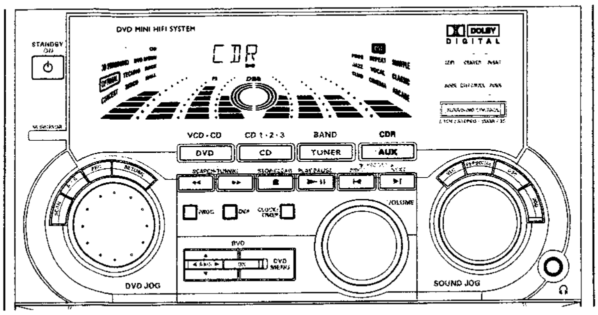
For MW band
To change from 9 kHz to 10 kHz or vice versa

Changing of tuning grid will erase all previously stored preset stations.

1 Disconnect the system from the AC power supply *(pull out the AC power cord)*.
2 Press **TUNER** and **TUNING ▶▶** depressed while reconnecting the system to the AC power supply.
  → Display will show "GRID 9" or "GRID 10".

Notes:
- *GRID 9 indicates that the tuning grid is in step of 9 kHz in MW band. GRID 10 indicates that the tuning grid is in step of 10 kHz in MW band.*
- *FM tuning grid will also be changed from 50 kHz to 100 kHz or vice versa. All preset radio stations will also be erased.*

AUX/CDR



Selecting External Equipment

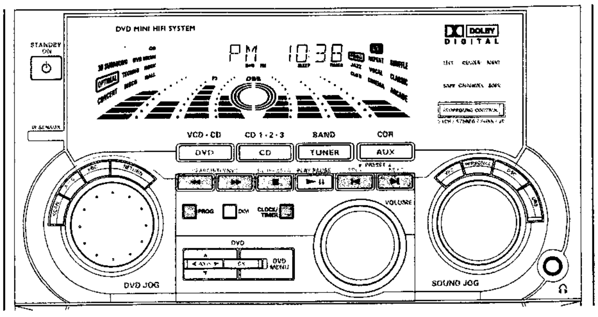
If you have connected the audio out terminals of the external equipment (TV, VCR, Laser Disc player, DVD player, or CD Recorder) to the AUX/CDR IN terminals, you can hear the enhanced sound from the system.

1 Press **AUX** (CDR) to select the CDR mode.
→ "CDR" will be displayed.

2 Press **AUX** (CDR) again to select external (normal AUX) mode.
→ "AUX" will be displayed.

Notes:
- *There are two Auxiliary modes:*
  - *i. the normal AUX mode.*
  - *ii. the CDR mode, where the LINE OUT of this mini system is muted. You will not be able to record or listen to the sound from the LINE OUT.*
- *You are advised not to listen to and record from the same source simultaneously.*
- *All the sound control features (e.g. DSC, DBB, etc.) are available for selection.*

CLOCK



View Clock

You can view the clock (if it is set) if the system is in Standby mode or when any sound source is selected (CD, TUNER, etc.). The clock will be displayed for about seven seconds.

- Press **CLOCK/TIMER** briefly.
  → "PM 10:38" or "22:38" (the current time) will be displayed depending on whether you have selected 12- or 24-hour mode.
  → "-- : --" will be displayed if the clock is not set.

Clock Setting

The clock can be set in either 12- or 24-hour mode, e.g. "AM 12:00" or "00:00". Before setting the clock, you must be in the View Clock mode.

1 Press **CLOCK/TIMER** to select clock mode.

2 Press **PROG** *(on the system only)* to select 12- and 24- hour mode.
→ If 12-hour mode is selected, "AM 12:00" starts flashing.
→ If 24-hour mode is selected, "00:00" starts flashing.

3 Set the hour with ◀◀ or ▶▶ on the system.

4 Set the minute with ◀◀| or ▶▶| on the system.

TIMER

5 Press **CLOCK/TIMER** again to store the setting.
→ The clock starts.

- To exit without storing the setting, press ■ on the system.

Notes:
- *During clock setting, if no button is pressed within 90 seconds, the system will exit clock setting mode automatically.*
- *When a power interruption occurs, the clock setting is erased.*

Timer Setting

- The system can switch on to CD or TUNER mode automatically at a preset time. It can serve as an alarm to wake you up.
- Before setting the timer, make sure the clock is set correctly.
- The timer will always be switched on once it is set.
- **The volume of the timer will increase from the minimum level until the volume level before the set is switched to standby mode.**

1 Press and hold **CLOCK/TIMER** for more than ***2 seconds*** to select timer mode.
→ "AM 12:00" or "00:00" or the last timer setting starts flashing depending on whether you have selected 12- or 24-hour mode.
→ The TIMER starts flashing.
→ The selected source is lit while other available sources are flashing.

2 Press **CD** or **TUNER** to select the desired source.

- Before selecting CD, make sure a CD is loaded in the CD tray.

3 Press ◀◀ or ▶▶ on the system to set the hour for the timer to start.

4 Press ◀◀| or ▶▶| on the system to set the minute for the timer to start.

5 Press **CLOCK/TIMER** to store the start time.
→ The timer is now set.
→ The TIMER remains on the display.

- At the preset time, the timer will be activated.
  → The selected source will be played.

Notes:
- *During timer setting, if no button is pressed within 90 seconds, the system will exit timer setting mode automatically.*
- *If the source selected is TUNER, the last tuned frequency will be switched on.*
- *If the source selected is CD, playback will begin with the first track of the selected disc or programme. If the CD trays are empty, TUNER will be selected instead.*

To switch off the TIMER
- Press **TIMER** on the remote control.
  → The timer is now switched off.
  → The display will show "CANCEL" and the TIMER disappears.

To start the TIMER again *(for the same preset time and source)*
- Press **TIMER** on the remote control.
  → The timer is now on.
  → The TIMER appears on the display.

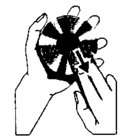
MAINTENANCE

Maintenance

Cleaning the Cabinet

- Use a soft cloth slightly moistened with a mild detergent solution. Do not use a solution containing alcohol, spirits, ammonia or abrasives.

Cleaning Discs



- When a disc becomes dirty, clean it with a cleaning cloth. Wipe the disc from the centre out.
- Do not use solvents such as benzine, thinner, commercially available cleaners, or antistatic spray intended for analogue records.

Cleaning the disc lens

- After prolonged use, dirt or dust may accumulate at the disc lens. To ensure good playback quality, clean the disc lens with Philips CD Lens Cleaner or any commercially available cleaner. Follow the instructions supplied with cleaner.

TROUBLESHOOTING

Warning! Under no circumstances should you try to repair the set yourself as this will invalidate the guarantee. Do not open the set as there is a risk of electric shock.

- If a fault occurs, check the points listed below before taking the system for repair.
- Should any problems persist after you have made these checks, consult your nearest dealer or service centre.

DVD-Video Player Operation

Distorted picture or no colour with player menu.

- The disc format does not match your TV's video signal (PAL/NTSC).
- → *Replace a recommended disc (refer to the instruction of this manual).*
- The system setting is not correct.
- → *Make sure the NTSC/PAL setting at the player matches the video signal of your television (see NTSC/PAL setting).*
- Check the disc for fingerprints.
- → *Clean with a soft cloth, wiping from centre to edge.*
- → *Sometimes a small amount of picture distortion may appear, this is not malfunction.*

No return to start-up screen when disc is removed.

- Check to see if the programme requires another disc to be loaded.
- → *Reload a disc.*
- → *Reset by switching the player off, then on again.*

Player does not respond to all operating commands during playback.

- Operations are not permitted by the disc.
- → *Refer to the instruction of the disc.*

No audio at digital output.

- The digital connections are not properly connected or connected wrongly
- → *Check the digital connections.*
- Incorrect digital output settings.
- → *Check the settings menu to make sure the digital output is set to ALL or PCM.*
- → *Check if the audio format of the selected audio language matches the receiver capabilities.*

No picture on TV screen.

- The video cable is not connected.
- → *Connect the cable between the system and TV.*

TROUBLESHOOTING

CD Player Operation

"NO DISC" is displayed.

- The disc is inserted upside down.
- → *Place disc with printed side up.*
- Moisture condensation at the lens.
- → *Wait until lens has adjusted to normal room temperature.*
- There is no disc in the CD tray.
- → *Insert a disc.*
- The disc is dirty, badly scratched or warped.
- → *Clean or replace the disc.*
- The disc lens is dirty or dusty.
- → *See section under Maintenance (page 40).*

"DISC NOT FINALIZED" is displayed.

- The CD-RW or CD-R disc is not properly recorded for use with a standard CD player.
- → *Read the instruction booklet of your CD-Rewritable or CD-Recorder on how to finalise a recording.*
- The CD is badly scratched or dirty.
- → *Replace or clean CD.*

Radio Reception

Poor radio reception.

- The signal is too weak.
- → *Adjust the antenna.*
- → *Connect an external antenna for better reception.*
- The TV or VCR is too closed to the stereo system.
- → *Separate the stereo system from the TV or VCR.*

Cannot tune to radio station.

- Wrong tuning grid.
- → *Switch to the correct tuning grid.*

General

System does not react when any button is pressed.

- Electrostatic discharge.
- → *Press STANDBY ON to switch the system off. Remove the AC power plug from the wall outlet, then reconnect the power plug and switch on the system again.*

No or poor sound.

- Volume is not turned up.
- → *Adjust VOLUME.*
- The headphones are connected.
- → *Disconnect the headphones.*
- Speakers are not connected or are connected wrongly.
- → *Check that the speakers are connected correctly.*
- → *Make sure the stripped speaker wire is clamped.*

Reversed left and right sound.

- Speakers are connected wrongly.
- → *Check the speaker connections and location.*

Lack of bass sound or apparently imprecise physical location of musical instruments.

- Speakers are connected wrongly.
- → *Check the speaker connection for proper phasing, coloured/black wires to coloured/black terminals.*

Remote control has no effect on the system.

- Wrong source is selected.
- → *Select the source (CD, TUNER, etc.) before pressing the function button (▶, ⏮, ⏭, etc.).*
- The distance to the system is too large.
- → *Reduce the distance.*
- Batteries are inserted incorrectly.
- → *Insert the batteries with their polarities (+/– signs) as indicated.*
- Batteries are exhausted.
- → *Replace the batteries.*

Timer is not working.

- Clock is not set.
- → *Set the clock.*
- Timer is not switched on.
- → *Press TIMER to switch on the timer.*

Clock setting is erased.

- There was a power failure.
- → *Reset the clock.*

System displays features automatically; buttons flash continuously.

- Demonstration mode is switched on.
- → *Press and hold ■ (on the system) for five seconds to switch off the demonstration.*

There is a howling sound at the external source.

- You hear feedback when you are listening in AUX mode
- → *Press AUX to select CDR mode.*

All lighted buttons are not lit

- Display is switched on in DIM 3 mode.
- → *Press DIM until DIM OFF display mode is shown.*

ADDITIONAL FEATURES FOR OTHER VERSIONS

OPERATING THE SYSTEM

Easy Set

EASY SET allows you to store all available radio stations and RDS stations automatically.

1 Press and hold **STANDBY ON** *(on the system only)* for ***5 seconds***; when the system is in standby or demonstration mode.
  - → "EASY SET" will be displayed, and followed by "TUNER" and then "AUTO".
  - → EASY SET will start searching for all RDS radio stations with sufficient signal strength and then followed by radio stations on FM, MW and LW band respectively. Weak RDS radio stations may be stored in later presets.
  - → All available RDS and radio stations with sufficient signal strength will be stored. Up to 40 presets may be stored.

2 The system will proceed to set the RDS time automatically with the stored RDS preset station.

- If no RDS station is available in the first preset station, the programme will exit automatically.
  - → After a radio station is found, "EASY SET" will be displayed and followed by "TIME".
- When searching RDS time;
  - → "SEARCH RDS TIME" will be displayed.
  - → When RDS time is read, "RDS TIME" will be displayed. The current time will be displayed for 2 seconds and stored automatically.

Notes:
- *EASY SET will start with the RDS station, if there are still presets available, it will continue to store the FM, MW and LW bands respectively.*
- *When EASY SET is used, all previously stored radio stations will be replaced.*
- *The last preset radio station or the first available RDS station will appear on the display when EASY SET is completed.*
- *If RDS station does not transmit RDS time within 90 seconds, the programme will exit automatically and the display will show "NO RDS TIME".*

Switching the system to power save mode *(when Demonstration mode is disabled)*

- Press **POWER SAVE** to switch to energy saving mode (< 2 watts).
  - → "LOW POWER STANDBY ON" will be displayed, after which the display screen goes blank.
  - → The low power STANDBY ON LED will be lit.

Note:
- *if the demonstration mode has not been disabled, it will resume 5 seconds later.*

CD / TUNER

CD Text

It will enable you to know which album and its track you are selecting or playing on specially encoded CD.

- Press **RDS/CD TEXT**.

  At stop mode
  - → The title of album or total playing time will be displayed.

  During Playback
  - → The title of album, track title or elapsed time will be displayed.
- If the album and track title are not known.
  - → "NO TEXT ON DISC" will be displayed.

Receiving RDS Radio Station

RDS (Radio Data System) is a broadcasting service that allows FM stations to send additional information along with the regular FM radio signal. This additional information can contain:

- **STATION NAME:** The radio station name is displayed.
- **PROGRAMME TYPE:** The following programme types exist and can be received by your tuner: News, Affairs, Info, Sport, Educate, Drama, Culture, Science, Varied, Pop M, Rock M, M.O.R. (middle of the road music), Light M, Classics, Other M, No type.
- **RADIO TEXT (RT):** text messages appear in the display.

When you have tuned to a RDS station, the RDS logo (and the radio station name will appear on the display:

- The display normally shows the radio station name if available.

  By repeatedly pressing **RDS/CD TEXT** button you can change the type of display information:
  - → The display shows in turn:

    STATION NAME → PROGRAMME TYPE → RADIO TEXT → TUNED FREQUENCY → STATION NAME ...

Note:
- *When you press the RDS/CD TEXT button and the display shows "NO RDS", it indicates that either the tuned station is not transmitting RDS signal or it is a non RDS station.*

RDS Clock

Some RDS station may be transmitting a real clock time at an interval of every minute.

Setting the time with RDS clock

1 Press **CLOCK/TIMER**.
  - → "-- : --" or current time appears on the display.

2 Press **CLOCK/TIMER** once more to enter clock setting mode.

TUNER

  - → "00:00" or current time starts flashing.

3 Press **RDS/CD TEXT**.
  - → The message "SEARCH RDS TIME" will be displayed.
  - → If the station does not transmit RDS clock, "NO RDS TIME" will be displayed.
  - → When the RDS clock is read, "RDS TIME" will be displayed. The current clock time is displayed for 2 seconds and will be stored automatically.
  - → If within 90 seconds, the RDS time is not detected, "NO RDS TIME" will be displayed.

Note:
- *Some RDS station may be transmitting a real time clock at a minute interval. The accuracy of the transmitted time depends on the transmitting RDS station.*

NEWS/TA (Traffic Announcement)

(only available in Radio Station with RDS)

You can activate NEWS or TA function in Standby, Demonstration or any source mode except Tuner mode. Once the News Programme Type (for NEWS function) or Traffic Announcement data (for TA function) is detected in any of the selected RDS stations, it will switch to TUNER mode automatically.

NEWS/TA key toggles in the following sequence :

NEWS → TA → OFF → NEWS

To start NEWS or TA function

1 Press **NEWS/TA** to select NEWS function.
  - → The **NEWS** and "NEWS" will be displayed.
- If you want to select TA function, press **NEWS/TA** again.
  - → The **TA** and "TA" will be displayed.

2 When NEWS or TA is selected;

- It will scan stations stored in the first 5 preset and wait for the News Programme Type / Traffic Announcement data to be available in any of these RDS stations. During the search :
  - → The current source activity will remain uninterrupted.
  - → If no RDS station is found in the first 5 presets, the NEWS/TA function will be switched off. The display will show "NO RDS NEWS" or "NO RDS TA" and **NEWS** or **TA** will disappear from the display.
- When NEWS/TA transmission is detected, the system will switch to Tuner mode.
  - → The **NEWS** or **TA** starts flashing.

To cancel NEWS or TA function

- Press **NEWS/TA** until the **NEWS** or **TA** disappears and "TA OFF" is displayed.

Notes:
- *If you are listening to a non RDS TUNER radio station and should you decide to hear NEWS or TA, first select other source (e.g. CD, DVD or AUX), then press NEWS/TA.*
- *Before using the NEWS or TA feature, ensure that the first 5 presets are RDS stations.*
- *The NEWS/TA works only once for each activation.*
- *During News bulletin or Traffic Announcement, you can press any available source or Tuner function keys to cancel NEWS/TA function and execute the relevant source mode.*
- *If set is switched to Tuner source, the NEWS/TA function will be cancelled, "NEWS OFF" or "TA OFF" will be displayed immediately after the "TUNER" message.*

SLEEP TIMER

Sleep *(only on remote control)*

This feature allows you to select a length of time after which the system will switch to the standby mode automatically.

1 Press **SLEEP** on the remote control repeatedly to select a period of time.
  - → The selections are as follows (time in minutes):

    60 → 45 → 30 → 15 → OFF → 60 ...
  - → "SLEEP XX" or "OFF" will be displayed. "XX" is the time in minutes.

2 When you reach the desired length of time, stop pressing the **SLEEP** button.
  - → After this amount of time passes, the system will switch to the standby mode.

To switch off the Sleep Timer

- Press **SLEEP** repeatedly until "OFF" is displayed, or press the **STANDBY ON** button.

DISMANTLING INSTRUCTIONS

1. Open DVD Tray / Removal of Cover DVD Tray manually

Note: Steps a) and b) are meant strictly for sets with a jammed tray that cannot be open via the Open/Close button.

a) With a Torx screw driver, make a marking of about 5.5cm from the tip as shown below.

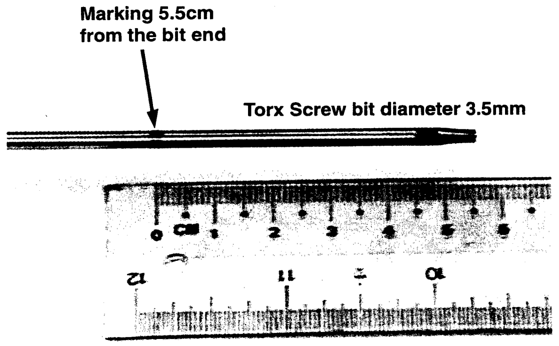

Marking 5.5cm from the bit end
Torx Screw bit diameter 3.5mm

Figure 1

b) Insert the tip of the screw driver into the slot S1 provide at the bottom of the Cabinet Front.

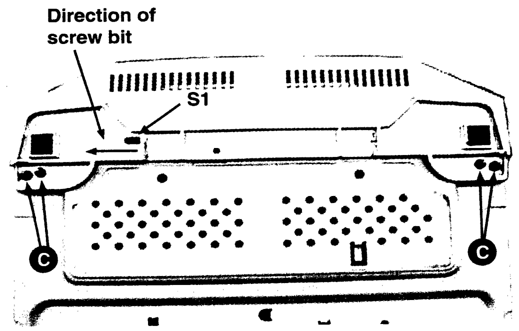


Figure 2

Keep the marking just outside the slot & rotate the screw driver upwards lightly as shown below.

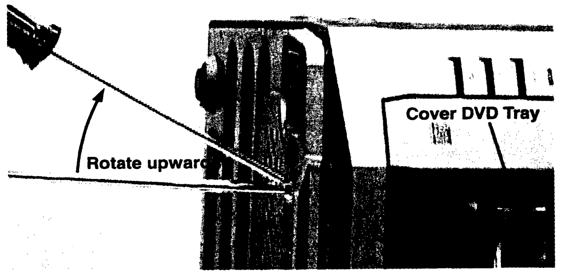


Figure 3

The DVD Tray should jerked outwards slightly.
This process is a simulation of pushing the white lever on the DVD Module inwards (see Figure 4).

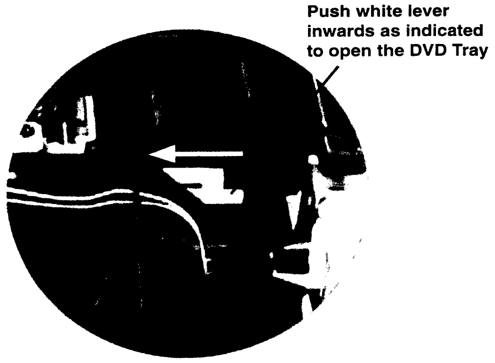

Push white lever inwards as indicated to open the DVD Tray

Figure 4

Note: This procedure is best done with the set laying on its side as shown, but when there is any jammed or foreign material in the tray it has to be done with the set placed upright at the edge of the table or work bench.

c) Pull the tray out and the Cover DVD Tray (pos 160) or any jammed disc can be removed. The Cover DVD Tray is removed as shown below.

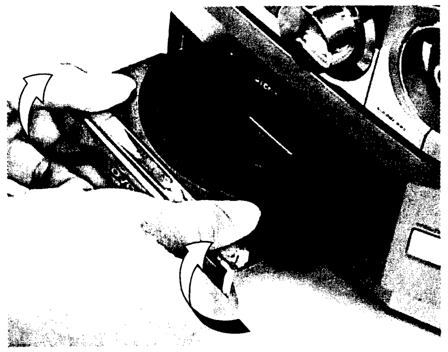


Figure 5

2. Removal of the Jog Shuttle & Volume knobs

a) Insert a strong string into the slot between the Jog Sound knob (pos 135) and Ring Ornamental (pos 144). Looped it 1,5 turns securely around the Jog Sound knob and pulled it out as shown in fig. 6

b) Do likewise for the Jog DVD knob (pos 135) and Volume knob (pos 139).

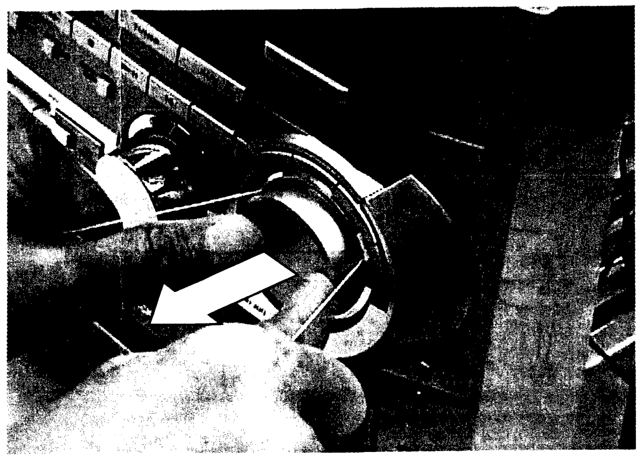


Figure 6

3. Open the CDC Tray / Removal of Cover CDC Tray & CDC module manually

a) Loosen 16 screws to remove the Cabinet Cover (pos 259).
- 5 screws on each side
- 6 screws on the rear

b) Slide out the CDC Tray as shown by using a finger or a flat screw driver to turn the gear towards the front and remove the Cover Tray CDC assembly (pos 106 & 107) as shown below.

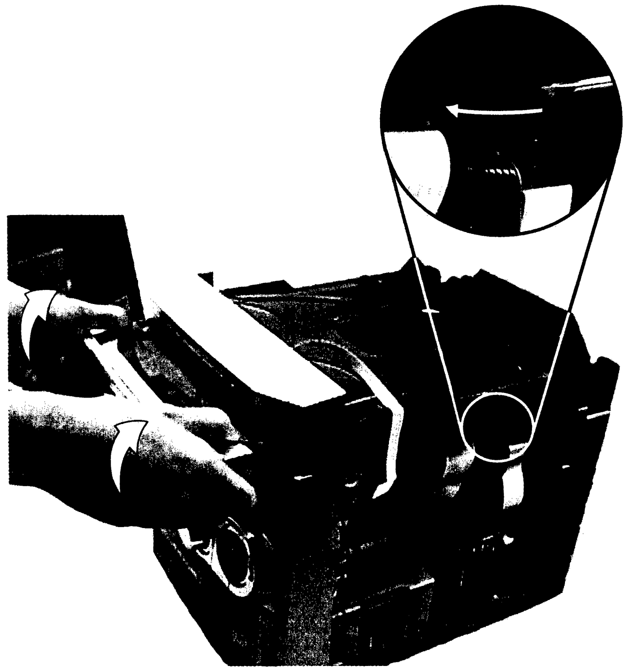


Figure 7

c) Loosen 2 screws A on the front as shown below.

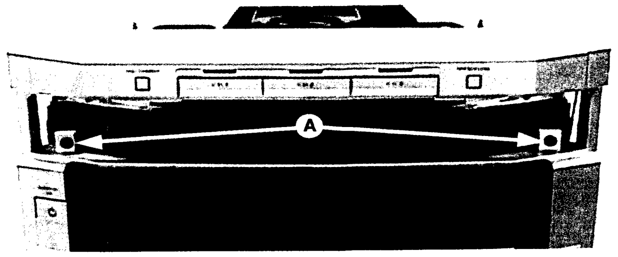


Figure 8

d) Loosen 2 screws B at the Rear and remove the CDC Module (pos 1104) as shown below.

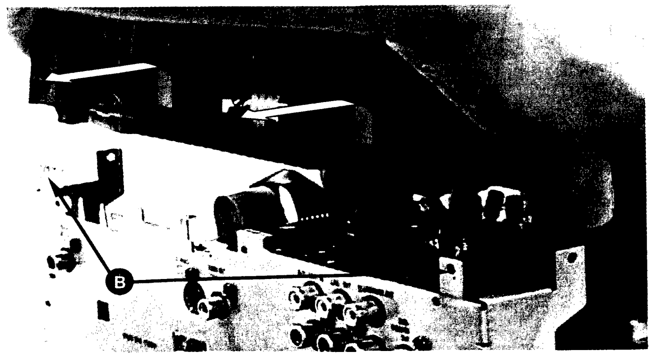


Figure 9

4. Dismantling the Front Panel Assembly

a) Loosen 4 screws C at the bottom of the Cabinet Front as shown below.

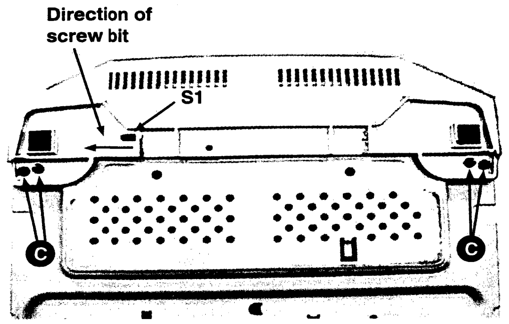


Figure 2

b) Release the Bar Tuner (pos 263) from the Plate Front (pos 254) as shown below while pushing the Front Panel assembly towards the front.

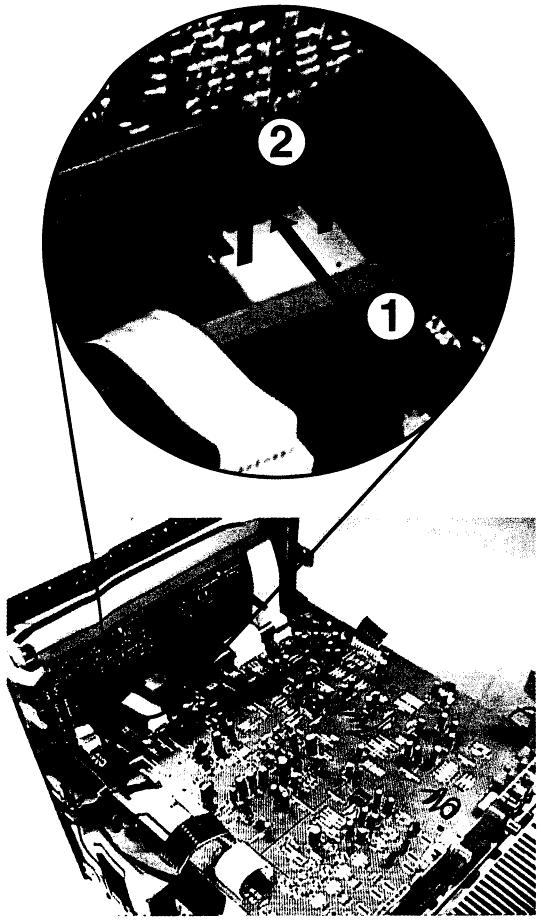


Figure 10

Note: It may be necessary to release screws S (see figure 16) if the flex cables to the front are too tight.

c) Loosen 5 screws J to remove the Plate Front (pos 254) and 4 more screws K to remove the Front µProcessor Board (pos 1102-A) as shown below.

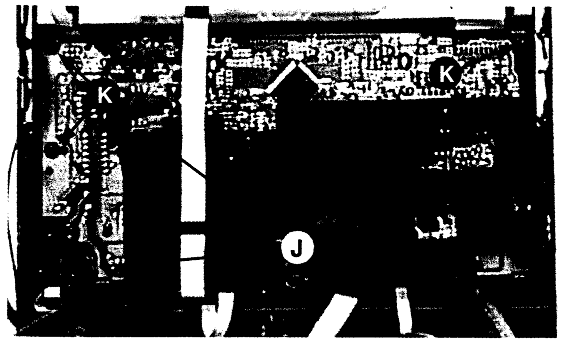


Figure 11

d) Loosen 7 screws L to remove the Deck Key Board as shown below.

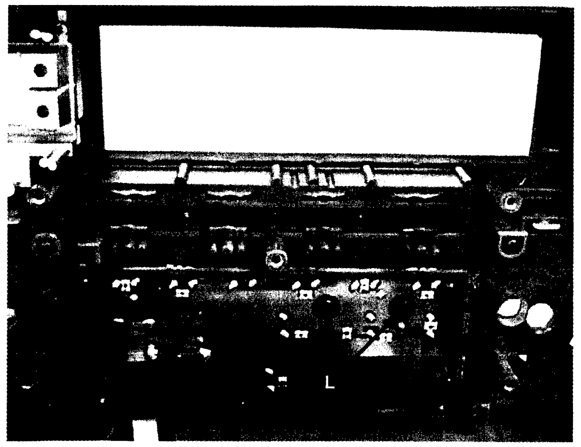


Figure 12

e) Loosen 3 screws M & 6 catches C4 to remove the Front Cover Ornamental assembly (pos 145 + all button controls) as shown below.

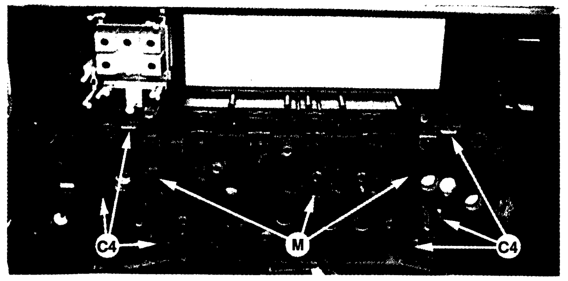


Figure 13

5. Dismantling the AV Board / Mains Transformer / Tuner Module / Plate Rear / Power 5 DVD Module

a) Loosen 6 screws D at the rear as shown below.

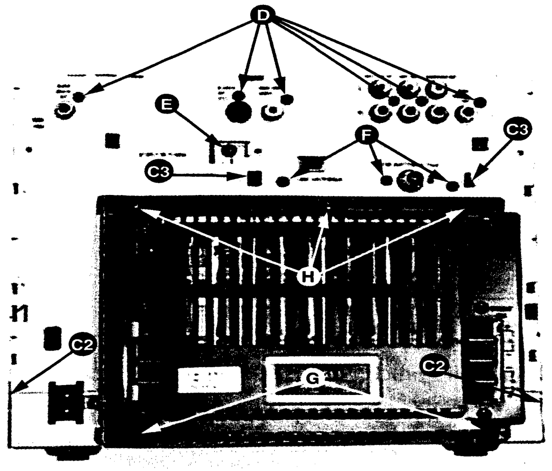


Figure 14

b) Loosen 3 screws I on the AV Board (pos 1101) and release 2 catches C1 to remove the Board as shown below.

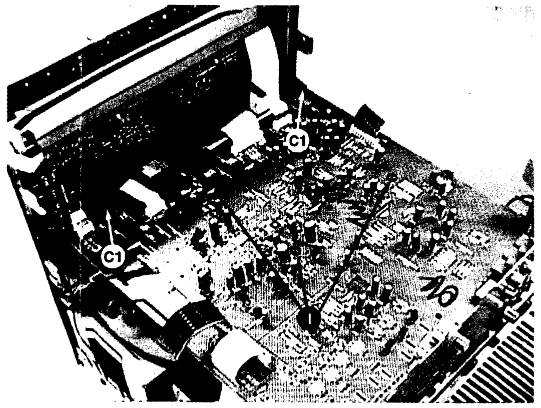


Figure 15

c) Loosen 1 screw E and remove the Bar Tuner (pos 263) by uncatching it from the Plate Front (pos 254) as shown in fig. 10.

d) Loosen 4 screws P to remove the Mains Transformer (pos 5280) as shown in figure 16.

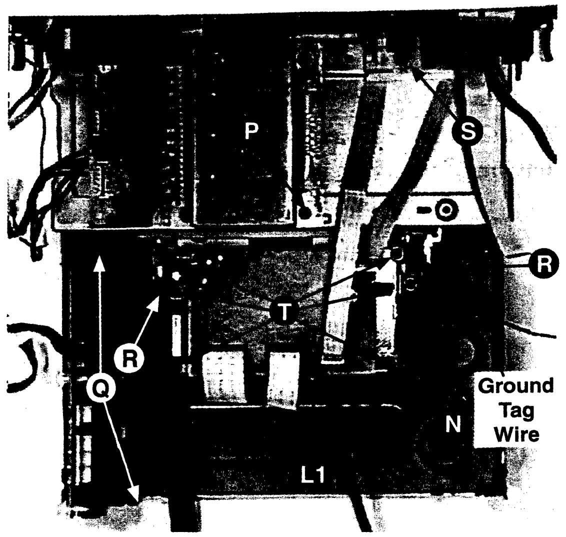


Figure 16

e) Loosen 3 screws F and 2 catches C3 to remove the Tuner Module (pos 257 & 1100) as shown in figure 14

f) Loosen 3 screws H, 2 screws G and releasing 2 catches C2 (see figure 14), it is also possible to remove the Plate Rear (pos 234) and Tuner Module together by skipping step e).

g) Loosen 1 screw N to release the grounding tag wire and the Power 5 Module can be removed by pulling out of the 2 catches H1 (see figure 17).

6. Dismantling the Rear Panel / AV Board / Tuner Module as a complete assembly

a) Loosen 2 screws G on the Rear as shown in figure 14.

b) Release the Bar Tuner (pos 263) from the Plate Front (pos 254) as shown in figure 10.

c) Release the 2 catches C2 on both sides of the Rear Panel (see figure 14), pull the complete Rear Panel assembly backwards slightly and lift it out of the Plate Bottom (pos 236).

d) Remove 1 screw N mounting the ground tag wire, Shield EMC DAC (pos 205) and Bracket Mound DVD (pos 197) to Plate Bottom (pos 236) will free the assembly completely (see figure 16).

Note: During re-assembly of this Rear Panel assembly it is very important that the Power 5 DVD Module's bracket be slotted back into the 2 hooks H1 (see figure 17) on the Bottom Pate and there should be no gap between the Module's Rucksack (pos 1103-47) and the Plate Rear (pos 234) as shown in figure 18.
It may be easier to dismantle the Power 5 DVD Module from the Rear Panel (pos 234) and re-assemble this Module to the Bottom Plate first followed by the rest fo the Rear Panel assembly.

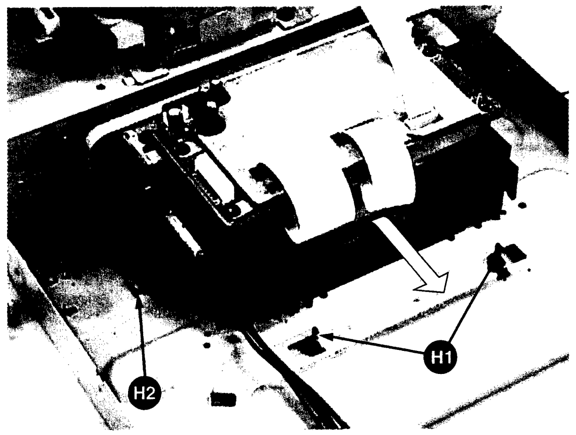
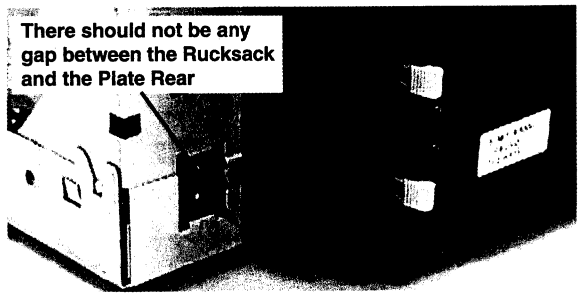


Figure 17



There should not be any gap between the Rucksack and the Plate Rear

Figure 18

7. Dismantling of DVD / DAC Module

a) Remove the Cover DVD Tray (See point 1)

b) Dismantle the Rear Panel Assembly. (See point 6)

c) Loosen 2 screws Q and unhook H2 (see figure 16 & 17) to remove the Mains Board (pos 1106-A) so that the Standby Transformer will not obstruct the sliding movement of the DVD / DAC Module assembly.

Note: Due to Standby Transformer size variation, the removal of Mains Board may not be required in some version.

d) Loosen 2 screws R (see figure 16), lift the rear portion of the DVD Module / DAC Module slightly to clear the stopper and slide it out towards the rear as shown figure 17.

e) Loosen 6 screws T (see figure 16) to separate the DAC Module.

f) Release the lug L1 by twisting and bend open the Shield EMC DAC cover (pos 205) to remove the DAC Board (pos 1102-C).

Note: Do not bend the Shield EMC DAC cover beyond 45°, otherwise the hindges may be broken.

g) Loosen 5 screws U to separate the DVD module from the Bracket Mound DVD (pos 197) as shown in figure 18.

7pin Connector for PC cable for ComPair

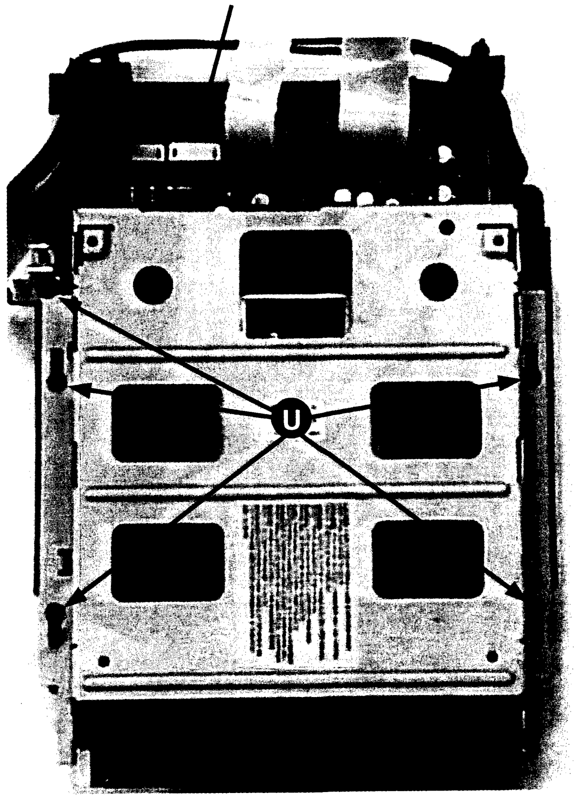


Figure 18

Repair hints on the Left/Right Loudspeaker Box

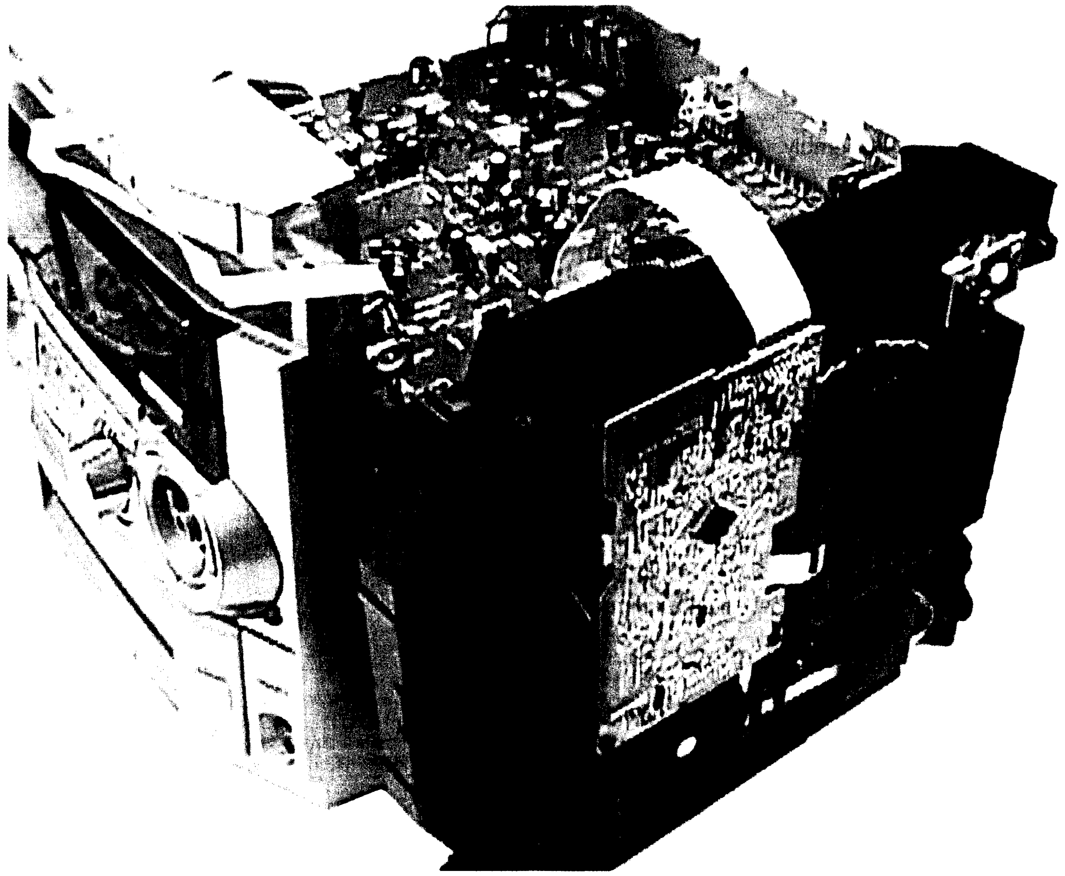
a) Remove the Cloth Frame assembly.

b) Pull out the 4 Grommet & loosen the 4 screws under the Grommet mounting location to remove the Woofer Ring.

c) To reach the Tweeter forced open the Front Panel Assembly from the wooden LS Box with the help of a minus screw driver.

Note: This procedure is not recommended because of high risk that the LS Box will be damaged.

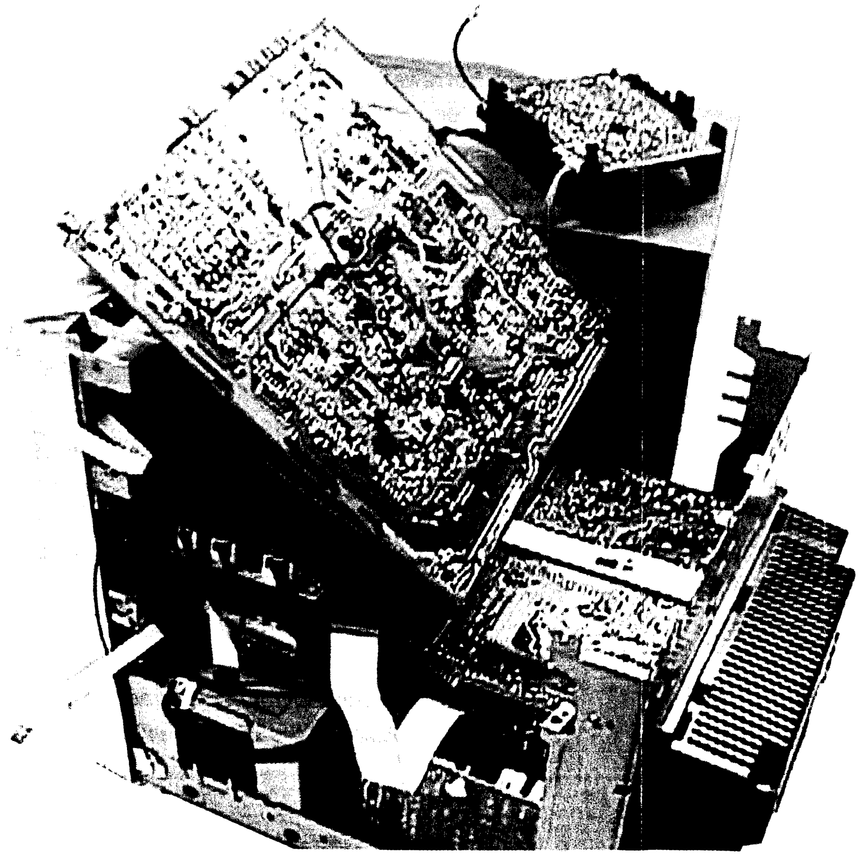
Service pos A - 3CDC-LC Module



Service pos B - AV Board / Tuner Board

Note: *The following cables from the AV board should be disconnected to achieve this Service position:*

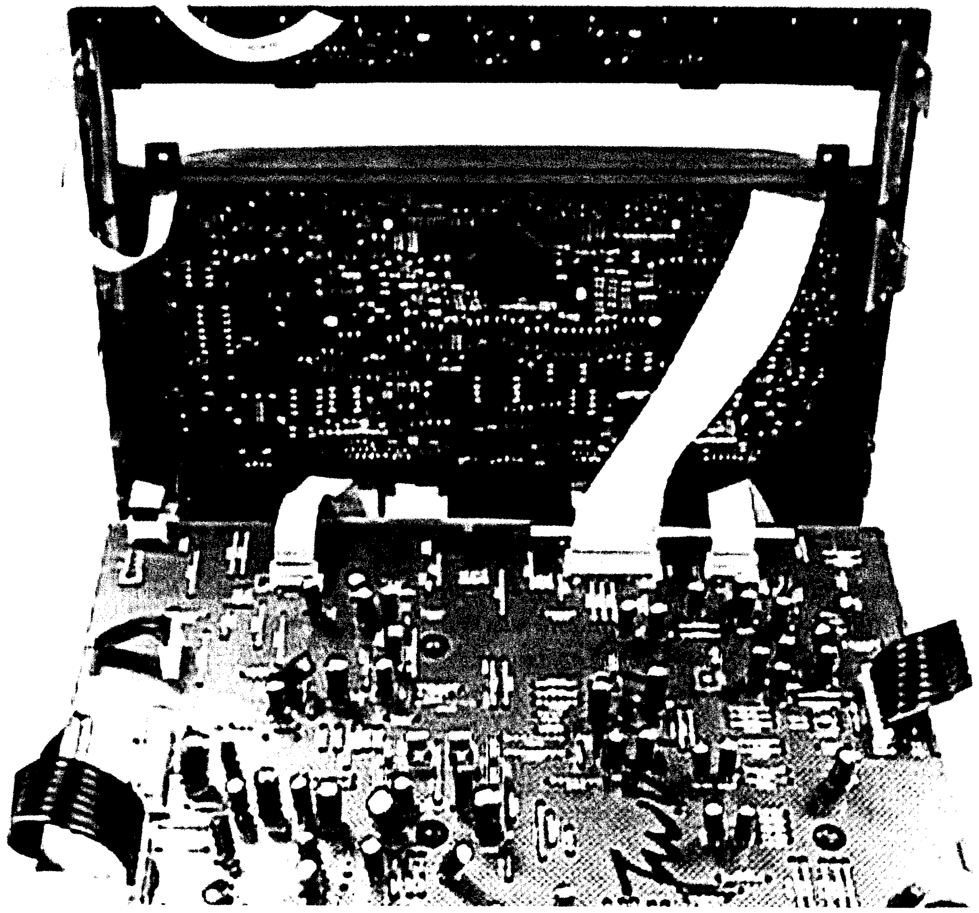
1) *Conn. 1517 to DAC board conn. 1905 (there will not be any signal in AV circuit part 3 because of this disconnection)*
2) *Ground pin 1504*
3) *Conn. 1510 / 1523 to 3CDC-LC module*
4) *Conn. 1528 to Headphone 1702*
5) *Conn. 1529 / 1511 to Front 1476 / 1474*



Service pos C - Front Board

Note: *The following cables should be disconnected to achieve this Service position:*

1) *Conn. 1510 / 1523 to 3CDC-LC module*



Service pos D - DAC Board

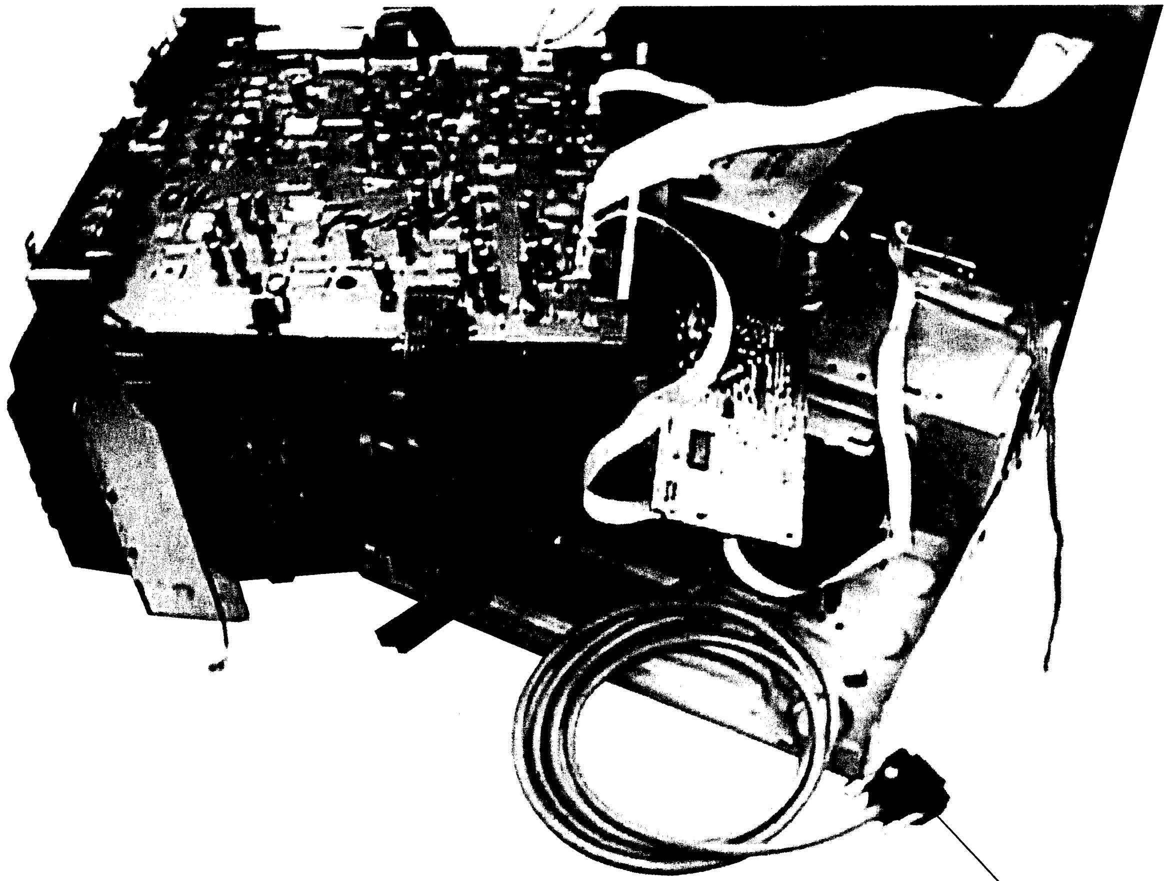
Note: The following cables should be disconnected to achieve this Service position:

From AV board

1) *conn. 1510 / 1523 to 3CDC-LC module*
2) *conn. 1528 to Headphone 1702*
3) *conn. 1529 / 1511 to Front conn. 1476 / 1474 (if necessary)*
4) *conn 1517 to DAC board conn. 1905*
   (there will not be any signal in AV circuit part 3 because of this disconnection)

From Tuner board:

1) *conn. 1121 / 1126 to Front conn. 44 / 43.*



Connecting cable for PC
(ComPair connection)

Service pos E - AV Board / Supply & Amplifiers Board

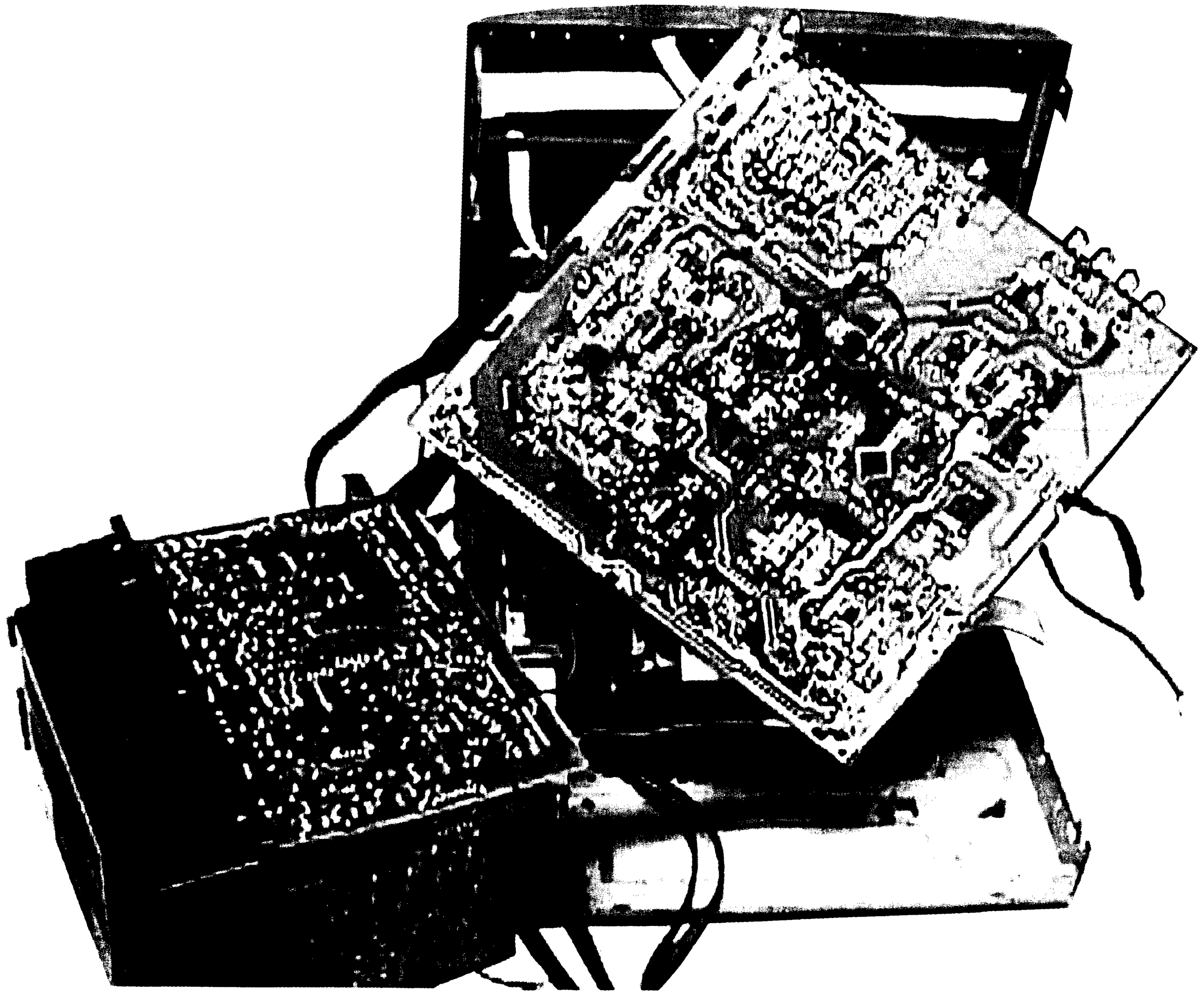
Note: The following cables should be disconnected to achieve this Service position:

From AV board

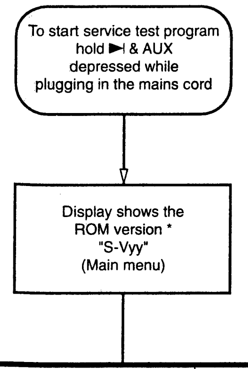
1) *conn. 1510 / 1523 to 3CDC-LC module*
2) *conn. 1528 to Headphone conn. 1702*
3) *conn. 21 to Tuner conn 1124*
4) *conn 1529 / 1511 to Front conn.1476 / 1474*
5) *conn 1517 to DAC board conn. 1905*
   (there will not be any signal in AV circuit part 3 because of this disconnection)

From Tuner board:

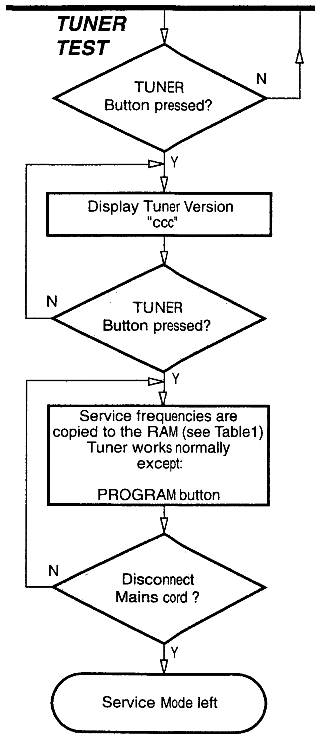
1) *conn. 1121 / 1126 to Front conn. 44 / 43.*

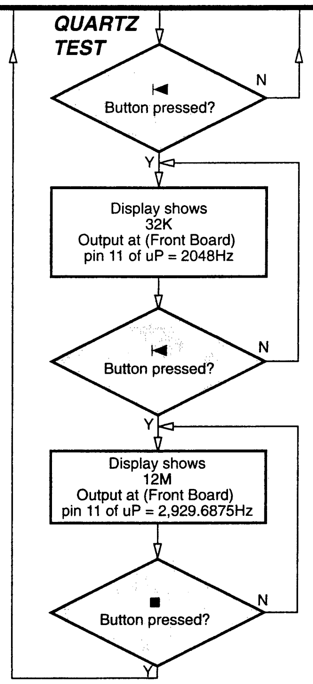


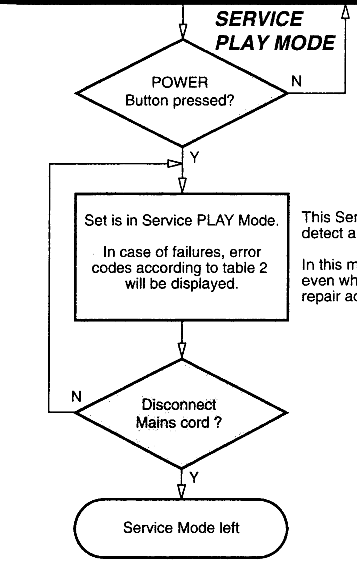
SERVICE TEST PROGRAM


To start service test program hold ►I & AUX depressed while plugging in the mains cord
Display shows the ROM version * "S-Vyy" (Main menu)

S refers to Service Mode.
V refers to Version.
yy refers to Software version number of µProcessor. (Counting up from 01 to 99)


TUNER TEST
TUNER Button pressed?
N
Y
Display Tuner Version "ccc"
N
TUNER Button pressed?
Y
Service frequencies are copied to the RAM (see Table1) Tuner works normally except:
PROGRAM button
N
Disconnect Mains cord ?
Y
Service Mode left


QUARTZ TEST
I◄ Button pressed?
N
Y
Display shows 32K Output at (Front Board) pin 11 of uP = 2048Hz
I◄ Button pressed?
N
Y
Display shows 12M Output at (Front Board) pin 11 of uP = 2,929.6875Hz
■ Button pressed?
N
Y


SERVICE PLAY MODE
POWER Button pressed?
N
Y
Set is in Service PLAY Mode.
In case of failures, error codes according to table 2 will be displayed.
N
Disconnect Mains cord ?
Y
Service Mode left

This Service Play Mode is intended to detect and identify the failures in the CD Mode.

In this mode the electronics will still function even when an error is detected so that repair activities can be carried out.

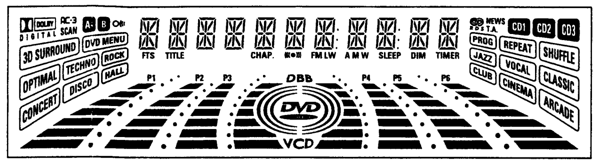
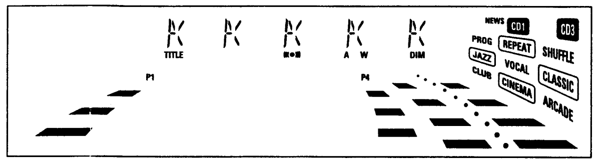
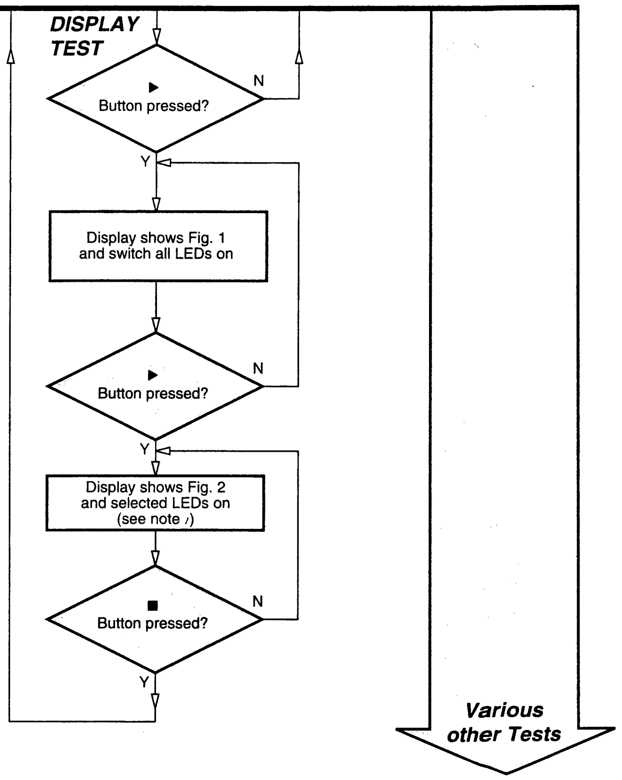

DOLBY DIGITAL
3D SURROUND
DVD MENU
OPTIMAL
TECHNO
ROCK
CONCERT
DISCO
HALL
TITLE
CHAP.
FM LW
A M W
SLEEP
DIM
TIMER
NEWS
CD1
CD2
CD3
PROG
REPEAT
SHUFFLE
JAZZ
VOCAL
CLASSIC
CLUB
CINEMA
ARCADE
P1
P2
P3
P4
P5
P6
DVD
VCD

Figure 1


TITLE
A
W
DIM
NEWS
CD1
CD3
PROG
REPEAT
SHUFFLE
JAZZ
VOCAL
CLASSIC
CLUB
CINEMA
ARCADE
P1
P4

note 1: CD1, CD3, CD (playback mode), DVD, CD (Source), AUX, Surr Left & Center

Figure 2


DISPLAY TEST
► Button pressed?
N
Y
Display shows Fig. 1 and switch all LEDs on
► Button pressed?
N
Y
Display shows Fig. 2 and selected LEDs on (see note 1)
■ Button pressed?
N
Y
Various other Tests

PRESET	Europe "EUR"	Oversea "OSE"	USA "USA"
1	87.5MHz	87.5MHz	87.5MHz
2	108MHz	108MHz	108MHz
3	531kHz	531/530kHz*	530kHz
4	1602kHz	1602/1700kHz*	1700kHz
5	558kHz	558/560kHz*	560kHz
6	1494kHz	1494/1500kHz*	1500kHz
7	153kHz	87.5/98MHz*	98MHz
8	279kHz	87.5MHz	87.5MHz
9	198kHz	87.5MHz	87.5MHz
10	87.5MHz	98MHz	87.5MHz
11	87.5MHz	98/87.5MHz*	87.5MHz

Table 1

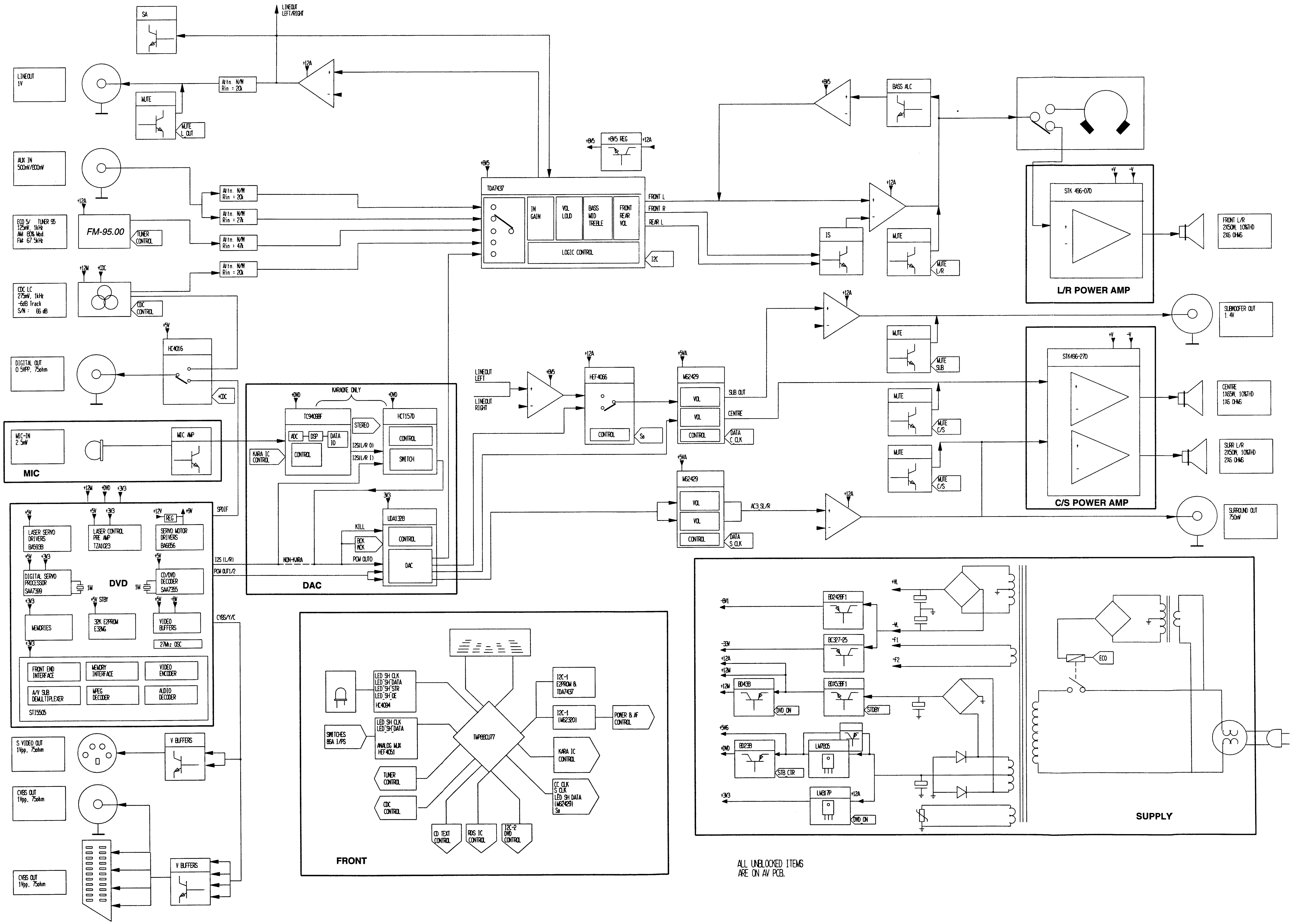
* Note: Depending on the selected grid frequency (9 or 10kHz). By holding the TUNER and ►► buttons depressed while switching on the Mains supply, the tuning grid frequency is toggled between 9kHz and 10kHz for the "OSC" version.

Error code	Error Description
E1000	Focus Error Triggered when the focus could not be found within a certain time when starting up the CD or when the focus is lost for a certain time during play.
E1001	Radial Error Triggered when the radial servo is off-track for a certain time during play.
E1002	Sledge In Error The sledge did not reach its inner position (inner-switch is still close) before approximately 6 Sec. have passed by. Inner-switch or sledge motor problem.
E1003	Sledge Out Error The sledge did not come out of its inner position (inner-switch is still open) before approximately 250 mSec. have passed by. Inner-switch or sledge motor problem.
E1005	Jump-offtrack error Triggered in normal play when the jump destination could not be found within a certain time. When this error occurred, software will try to recover by initiating the jump command again. If it is recoverable, the disc will continue to play.
E1006	Subcode Error Triggered when a new subcode was missing for a certain time during play.
E1007	PLL Error The Phase Lock Loop could not lock within a certain time.
E1008	Turntable Motor Error Generated when the CD could not reached 75% of speed during startup within a certain time. Discmotor problem.
E1020	Focus Search Error The focus point has not been found within a certain time.
E1070	The carousel switch is not open within certain time. This can happen when either the switch is defective and closed all the time, or when the carousel is blocked when located exactly at a disc position.
E1071	The carousel position switch did not close within a certain time. This can happen when the switch is defective and never closes electrically, or when the carousel is blocked in between two disc positions. The time-out is approximately 5 Sec.
E1079	The drawer could not enter the inside position is opening again. This can be caused because the drawer is blocked by something and cannot go fully inside, or the drawer switch is defective and does not close.

Table 2

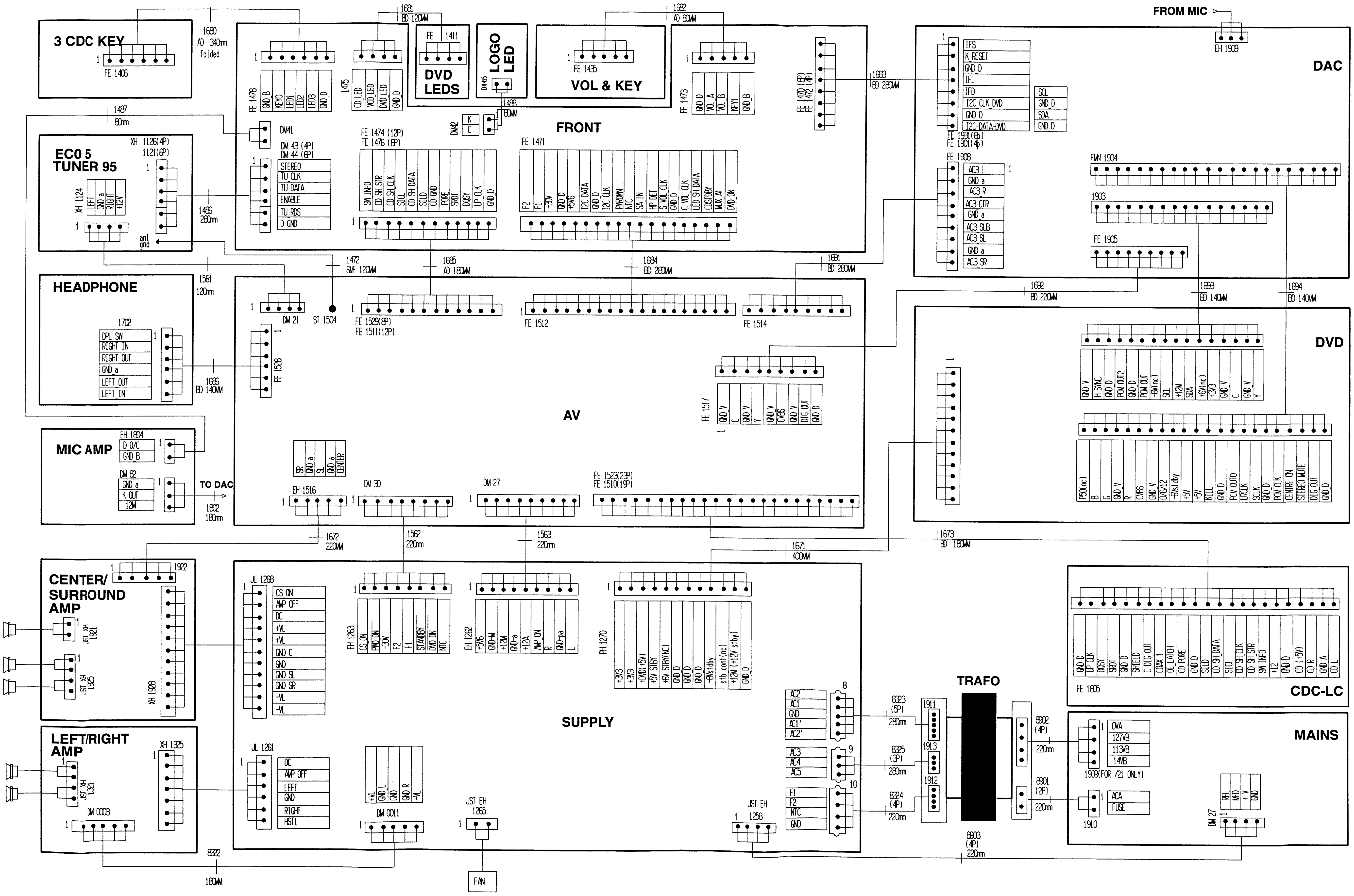
TEST	*Activated with*	*ACTION*
EEPROM TEST	►► ■ to Exit	A test pattern will be sent to the EEPROM. "PASS" is displayed if the uProcessor read back the test pattern correctly, otherwise "ERROR" will be displayed.
EEPROM FORMAT	◄◄	Load default data (including Virgin Mode). Display shows "NEW" for 1 second. ***Caution!*** ***All presets from the customer will be lost!!***
ENCODER TEST	Volume Knob or Jog Shuttle knob	Display shows value for 2 seconds. Values increases or decreases in steps of 1 until 0 (Min.) or 40 (Max.) is reached.
DVD DEALER & PLAYER TEST		Please refer to Chapter 9.
LEAVE SERVICE TESTPROGRAM	Disconnect mains cord	

SET BLOCK DIAGRAM

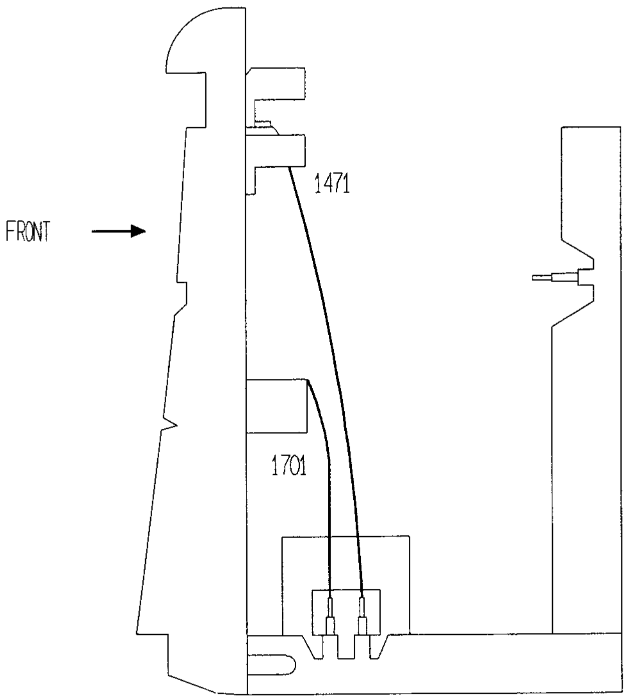

SA
LINEOUT LEFT/RIGHT
LINEOUT 1V
MUTE
MUTE L_OUT
Attn. N/W Rin = 20k
+12A
AUX IN 500mV/800mV
Attn. N/W Rin = 20k
Attn. N/W Rin = 27k
ECO 5/ TUNER 95 125mV, 1kHz AM: 80% Mod. FM: 67.5kHz
FM-95.00
TUNER CONTROL
Attn. N/W Rin › 47k
+12M
+CDC
CDC LC 275mV, 1kHz -6dB Track S/N : 66 dB
CDC CONTROL
Attn. N/W Rin = 20k
+5V
HC4016
DIGITAL OUT 0.5VPP, 75ohm
+CDC
MIC-IN 2.5mV
MIC AMP
MIC
SPDIF
+12M
+DVD
+3V3
+5V
LASER SERVO DRIVERS BA5938
+3V3
LASER CONTROL PRE AMP TZA1023
+12V
REG
+9V
SERVO MOTOR DRIVERS BA6856
DIGITAL SERVO PROCESSOR SAA7399
1M
DVD
CD/DVD DECODER SAA7355
+5V STBY
-8V
MEMORIES
32K E2PROM E32MG
VIDEO BUFFERS
27Mhz OSC
FRONT END INTERFACE
MEMORY INTERFACE
VIDEO ENCODER
A/V SUB DEMULTIPLEXER
MPEG DECODER
AUDIO DECODER
STI5505
I2S (L/R)
PCM OUT1/2
CYBS/Y/C
S VIDEO OUT 1Vpp, 75ohm
V BUFFERS
CVBS OUT 1Vpp, 75ohm
CVBS OUT 1Vpp, 75ohm
V BUFFERS
KARAOKE ONLY
+DVD
TC9409BF
ADC
DSP
DATA IO
CONTROL
KARA IC CONTROL
STEREO
I2S(L/R 0)
I2S(L/R 1)
HCT157D
CONTROL
SWITCH
3V3
UDA1328
KILL
BCK WCK
CONTROL
NON-KARA
PCM OUTO
DAC
DAC
+8V5
TDA7437
IN GAIN
VOL LOUD
BASS MID TREBLE
FRONT REAR VOL
LOGIC CONTROL
I2C
FRONT L
FRONT R
REAR L
+8V5 REG
+12A
IS
MUTE
MUTE L/R
BASS ALC
+V
-V
STK 496-070
FRONT L/R 2X50W, 10%THD 2X6 OHMS
L/R POWER AMP
SUBWOOFER OUT 1.4V
MUTE
MUTE SUB
LINEOUT LEFT
LINEOUT RIGHT
HEF4066
CONTROL
Sa
+5VA
M62429
VOL
VOL
CONTROL
DATA C_CLK
SUB OUT
CENTRE
STK496-270
CENTRE 1X65W, 10%THD 1X6 OHMS
MUTE
MUTE C/S
MUTE
MUTE C/S
SURR L/R 2X50W, 10%THD 2X6 OHMS
C/S POWER AMP
M62429
VOL
VOL
CONTROL
DATA S_CLK
AC3_SL/R
SURROUND OUT 750mV
LED_SH_CLK LED_SH_DATA LED_SH_STR LED_SH_OE HC4094
SWITCHES 8SA I/PS
LED_SH_CLK LED_SH_DATA ANALOG MUX HEF4051
TUNER CONTROL
CDC CONTROL
TMP88CU77
CD TEXT CONTROL
RDS IC CONTROL
I2C-2 DVD CONTROL
I2C-1 E2PROM & TDA7437
I2C-1 (M62320)
POWER & AF CONTROL
KARA IC CONTROL
CC CLK S CLK LED SH DATA (M62429) Sa
FRONT
+VL
-8V1
BD242BF1
-VL
BC327-25
-33V
~F1
~F2
+12A
+12M
+12M
BD43B
BDX53BF1
DVD_ON
STDBY
+5V6
+DVD
BD23B
LM7805
STB_CTR
+3V3
LM317P
+12A
DVD_ON
ECO
SUPPLY

ALL UNBLOCKED ITEMS
ARE ON AV PCB.

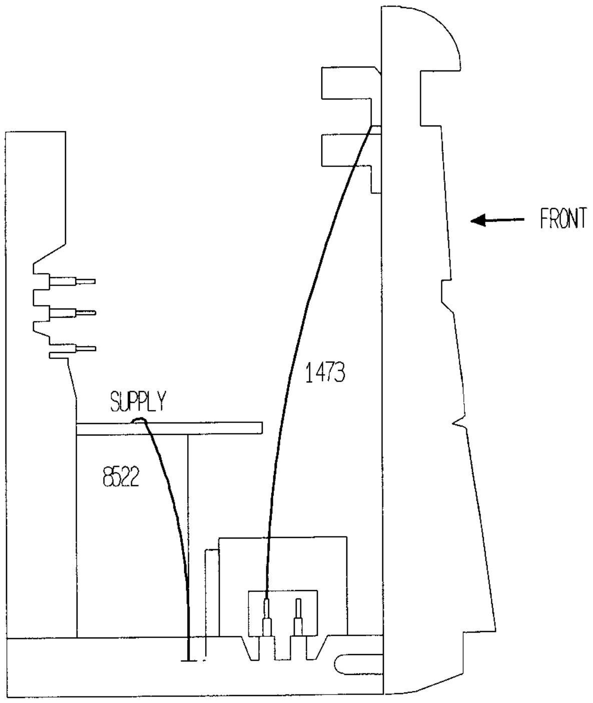
SET WIRING DIAGRAM


3 CDC KEY
FE 1406
1680
AD 340mm
folded
1681
BD 120MM
1682
AD 80MM
FE 1411
DVD
LEDS
LOGO
LED
EH1415
1488
80MM
VOL & KEY
FE 1435
FRONT
FE 1478
GND_B
KEYO
LED1
LED2
LED3
GND_D
1475
CD_LED
VCD_LED
DVD_LED
GND_D
DM41
DM42
K
C
DM 43 (4P)
DM 44 (6P)
STEREO
TU CLK
TU DATA
ENABLE
TU RDS
D GND
FE 1474 (12P)
FE 1476 (8P)
SW_INFO
CD SH STR
CD_SH_CLK
SICL
CD SH DATA
SILD
CD GND
PORE
SPDT
DOSY
UP CLK
GND D
FE 1471
F2
F1
-30V
GND D
+5V6
I2C DATA
GND D
I2C CLK
PWRDWN
NTC
SA_IN
HP DET
S_VOL_CLK
GND D
C_VOL_CLK
LED SH DATA
CDSTDBY
MUX A1
DVD ON
FE 1473
GND D
VOL_A
VOL_B
KEY1
GND_B
FE 1470 (8P)
FE 1472 (4P)
1683
BD 280MM
1487
80mm
ECO 5
TUNER 95
XH 1126(4P)
1121(6P)
XH 1124
LEFT
GND a
RIGHT
+12V
1486
280mm
ant
gnd
1472
SMF 120MM
1685
AD 180MM
1684
BD 280MM
1691
BD 280MM
HEADPHONE
1561
120mm
1702
DPL SW
RIGHT IN
RIGHT OUT
GND a
LEFT OUT
LEFT_IN
1686
BD 140MM
DM 21
ST 1504
FE 1529(8P)
FE 1511(12P)
FE 1512
FE 1514
FE 1528
AV
FE 1517
GND V
C
GND V
Y
GND V
CVBS
GND V
DIG OUT
GND_D
MIC AMP
EH 1804
D O/C
GND B
DM 82
GND a
K OUT
12M
TO DAC
1802
180mm
SR
GND a
SL
GND a
CENTER
EH 1516
DM 30
DM 27
FE 1523(23P)
FE 1510(19P)
1672
220MM
1562
220mm
1563
220mm
1671
400MM
1673
BD 180MM
FROM MIC
EH 1909
DAC
IFS
K RESET
GND D
IFL
IFD
I2C CLK DVD
GND D
I2C-DATA-DVD
SCL
GND D
SDA
GND D
FE 1933(8p)
FE 1901(4p)
FE 1908
AC3 L
GND a
AC3 R
AC3 CTR
GND a
AC3 SUB
AC3 SL
GND a
AC3 SR
FMN 1904
1903
FE 1905
1692
BD 220MM
1693
BD 140MM
1694
BD 140MM
DVD
GND V
H SYNC
GND D
PCM OUT2
GND D
PCM OUT
-8V(nc)
SCL
+12M
SDA
+6V(nc)
+3V3
GND V
C
GND V
Y
P50(nc)
B
G
GND V
R
CVBS
GND V
0/6/12
-8Vstdby
+5V
+5V
KILL
GND D
PCM OUT0
LRCLK
SCLK
GND D
PCM CLK
CENTRE_ON
STEREO MUTE
DIG OUT
GND D
CENTER/
SURROUND
AMP
1922
JST_XH
1321
JST_XH
1325
XH 1908
JL 1268
CS ON
AMP OFF
DC
+VL
+VL
GND C
GND
GND SL
GND SR
-VL
-VL
EH 1263
CS_ON
PWD_DN
-30V
F2
F1
STANDBY
DVD ON
NTC
EH 1262
+5V6
GND-M
+12M
GND-a
+12A
AMP ON
R
GND-pa
L
PH 1270
+3V3
+3V3
+DVD(+5V)
+5V STBY
+6V STBY(NC)
GND D
GND D
GND D
-8Vstdby
stb_contl(nc)
+12M (+12V stby)
GND D
SUPPLY
AC2
AC1
GND
AC1'
AC2'
8
AC3
AC4
AC5
9
F1
F2
NTC
GND
10
8323
(5P)
280mm
8325
(3P)
280mm
8324
(4P)
220mm
1911
1913
1912
TRAFO
8802
(4P)
220mm
8801
(2P)
220mm
8803
(4P)
220mm
LEFT/RIGHT
AMP
XH 1325
JST_XH
1321
DM 0003
JL 1261
DC
AMP OFF
LEFT
GND
RIGHT
HST1
+VL
GND L
GND
GND R
-VL
DM 0011
JST EH
1265
FAN
JST EH
1258
8322
180MM
CDC-LC
FE 1805
GND D
UP CLK
DOSY
SPDT
GND D
SHIELD
C_DIG OUT
COAX 1
OE LATCH
CD PORE
GND D
SILD
CD SH DATA
SICL
CD SH CLK
CD SH STR
SW INFO
+12
GND D
CD (+5V)
CD R
GND A
CD L
MAINS
OVA
127VB
113VB
14VB
1909(FOR /21 ONLY)
ACA
FUSE
1910
REL
MFD
+V
GND
DM 27

SET GROUND WIRING DIAGRAM


FRONT
1471
1701

SIDE VIEW OF RIGHT SIDE OF SET


FRONT
1473
SUPPLY
8522

SIDE VIEW OF LEFT SIDE OF SET

ITEM	FROM	TO
1471	MIDDDDLE SCREW OF CDC RIGHT BRACKET	LUG AT BOTTOM PLATE
1473	MIDDLE SCREW OF CDC LEFT BRACKET	LUG AT BOTTOM PLATE
1701	HEADPHONE PCB	LUG AT BOTTOM PLATE
8522	STAR PT OF SUPPLY PCB	DAC SHIELD & SCREW TO BOTTOM PLATE

FRONT BOARD

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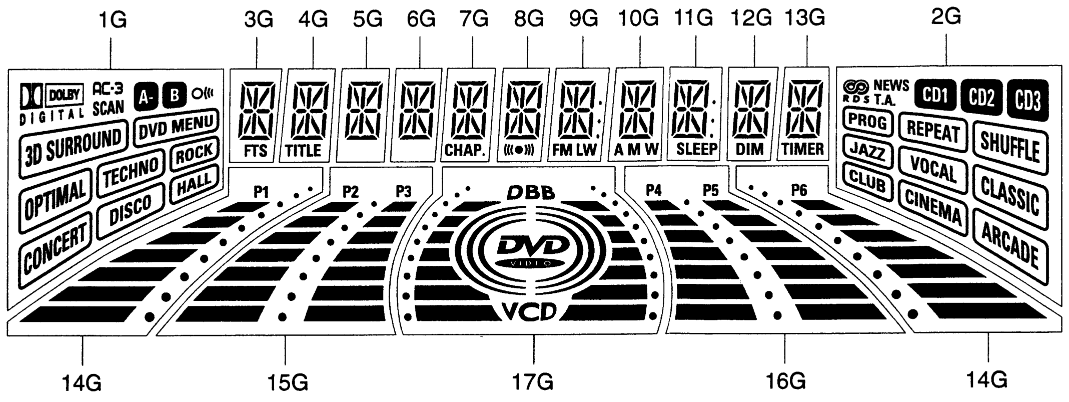
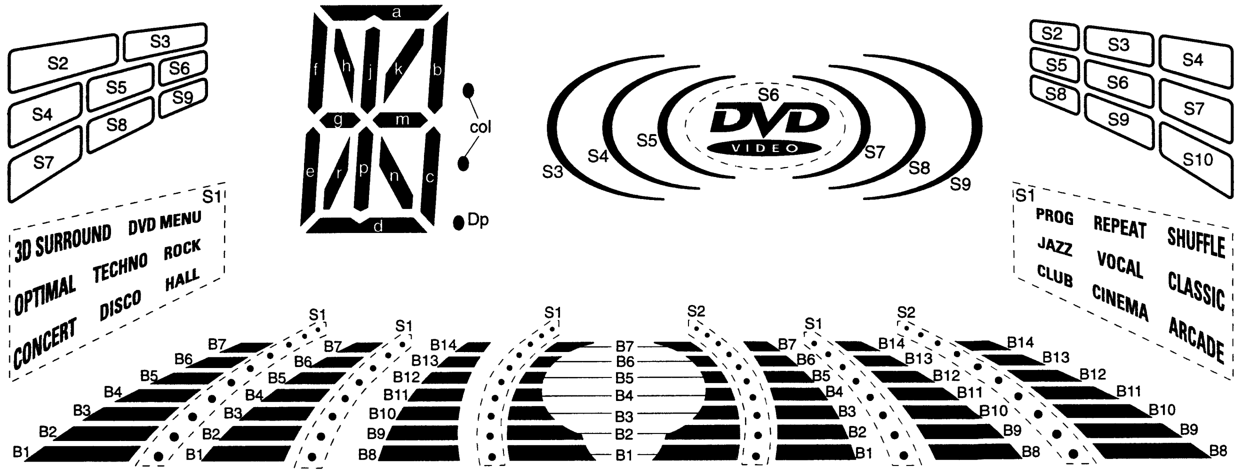
FTD DISPLAY PIN CONNECTIONS

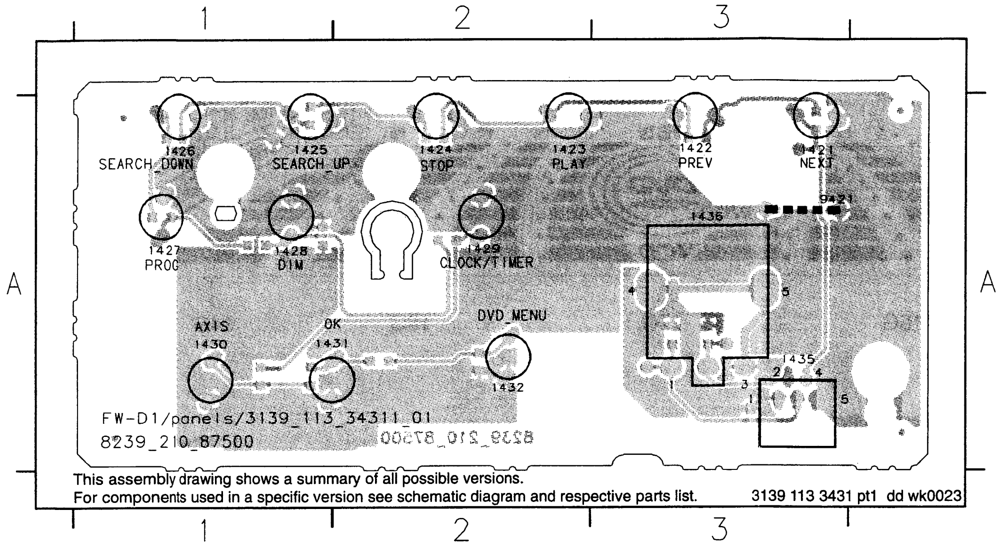

1G
3G
4G
5G
6G
7G
8G
9G
10G
11G
12G
13G
2G
DOLBY DIGITAL
AC-3 SCAN
A- B
3D SURROUND
DVD MENU
OPTIMAL
TECHNO
ROCK
CONCERT
DISCO
HALL
FTS
TITLE
CHAP.
FM LW
A M W
SLEEP
DIM
TIMER
RDS
NEWS
T.A.
CD1
CD2
CD3
PROG
REPEAT
SHUFFLE
JAZZ
VOCAL
CLASSIC
CLUB
CINEMA
ARCADE
P1
P2
P3
DBB
P4
P5
P6
DVD VIDEO
VCD
14G
15G
17G
16G
14G


S2
S3
S5
S6
S4
S8
S9
S7
S1
3D SURROUND
DVD MENU
OPTIMAL
TECHNO
ROCK
CONCERT
DISCO
HALL
a
f
h
j
k
b
col
g
m
e
p
n
c
d
Dp
S6
S5
S4
S3
DVD VIDEO
S7
S8
S9
S2
S3
S4
S5
S6
S7
S8
S9
S10
S1
PROG
REPEAT
SHUFFLE
JAZZ
VOCAL
CLASSIC
CLUB
CINEMA
ARCADE
B1
B2
B3
B4
B5
B6
B7
B8
B9
B10
B11
B12
B13
B14

	1G	2G	3G	4G	5G	6G	7G	8G	9G	10G	11G	12G	13G	14G	15G	16G	17G
P1	DOLBY DIGITAL	RDS	a	a	a	a	a	a	a	a	a	a	a	B1	B1	B1	B1
P2	AC-3	NEWS	h	h	h	h	h	h	h	h	h	h	h	B2	B2	B2	B2
P3	SCAN	T.A.	j , p	j , p	j , p	j , p	j , p	j , p	j , p	j , p	j , p	j , p	j , p	B3	B3	B3	B3
P4	A-	CD1	k	k	k	k	k	k	k	k	k	k	k	B4	B4	B4	B4
P5	B	CD2	b	b	b	b	b	b	b	b	b	b	b	B5	B5	B5	B5
P6	O((	CD3	f	f	f	f	f	f	f	f	f	f	f	B6	B6	B6	B6
P7	S2	S2	m	m	m	m	m	m	m	m	m	m	m	B7	B7	B7	B7
P8	S3	S3	g	g	g	g	g	g	g	g	g	g	g	P1	P2	P4	S1
P9	S4	S4	c	c	c	c	c	c	c	c	c	c	c	S1	S1	S1	S2
P10	S5	S5	e	e	e	e	e	e	e	e	e	e	e	B8	B8	B8	S3
P11	S6	S6	r	r	r	r	r	r	r	r	r	r	r	B9	B9	B9	S4
P12	S7	S7	n	n	n	n	n	n	n	n	n	n	n	B10	B10	B10	S5
P13	S8	S8	d	d	d	d	d	d	d	d	d	d	d	B11	B11	B11	S7
P14	S9	S9	FTS	TITLE	-	-	CHAP.	((•))	FM	A	SLEEP	DIM	TIMER	B12	B12	B12	S8
P15	S1	S10	-	-	-	-	-	-	LW	M	-	-	-	B13	B13	B13	S9
P16	-	S1	-	-	-	-	-	-	col	W	col	-	-	B14	B14	B14	DBB
P17	-	-	-	-	-	-	-	-	Dp	-	Dp	-	-	P6	P3	P5	S6
P18	-	-	-	-	-	-	-	-	-	-	-	-	-	S2	-	-	VCD

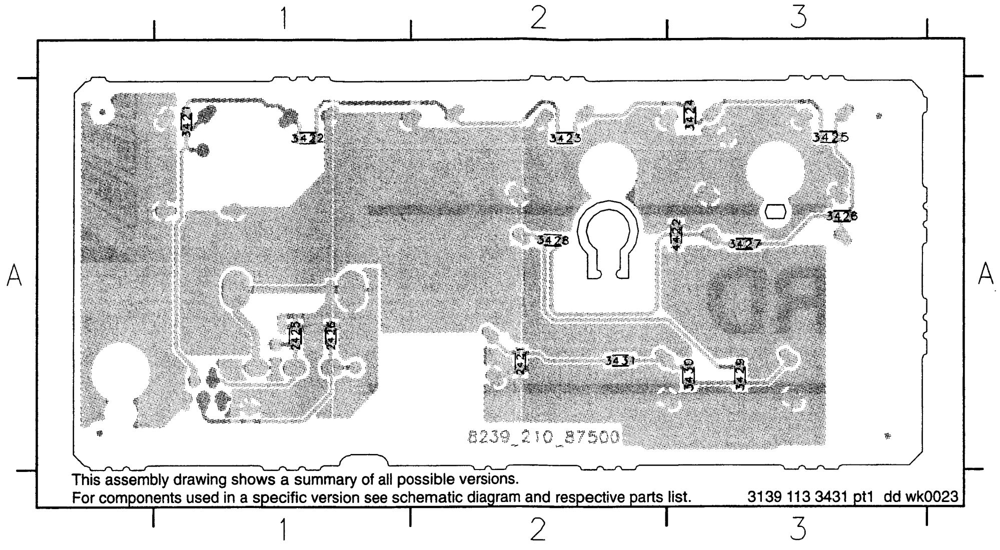
DECK KEY BOARD - COMPONENT LAYOUT

1421 A3 1423 A2 1425 A1 1427 A1 1429 A2 1431 A1 1435 A3 9421 A3
1422 A3 1424 A2 1426 A1 1428 A1 1430 A1 1432 A2 1436 A3


1
2
3
A
1426 SEARCH_DOWN
1425 SEARCH_UP
1424 STOP
1423 PLAY
1422 PREV
1421 NEXT
9421
1427 PROG
1428 DIM
1429 CLOCK/TIMER
1436
DVD_MENU
AXIS 1430
OK 1431
1432
1435
FW-D1/panels/3139_113_34311_01
8239_210_87500
This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram and respective parts list.
3139 113 3431 pt1 dd wk0023

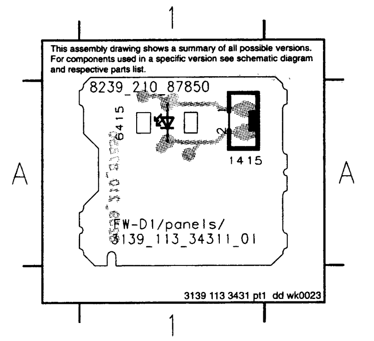
DECK KEY BOARD - CHIP LAYOUT

2421 A2 2426 A1 3422 A1 3424 A3 3426 A3 3428 A2 3430 A3 4422 A3
2425 A1 3421 A1 3423 A2 3425 A3 3427 A3 3429 A3 3431 A2


1
2
3
A
3421
3422
3423
3424
3425
3426
3427
4422
2425
2426
3431
3430
3429
3428
2421
8239_210_87500
This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram and respective parts list.
3139 113 3431 pt1 dd wk0023

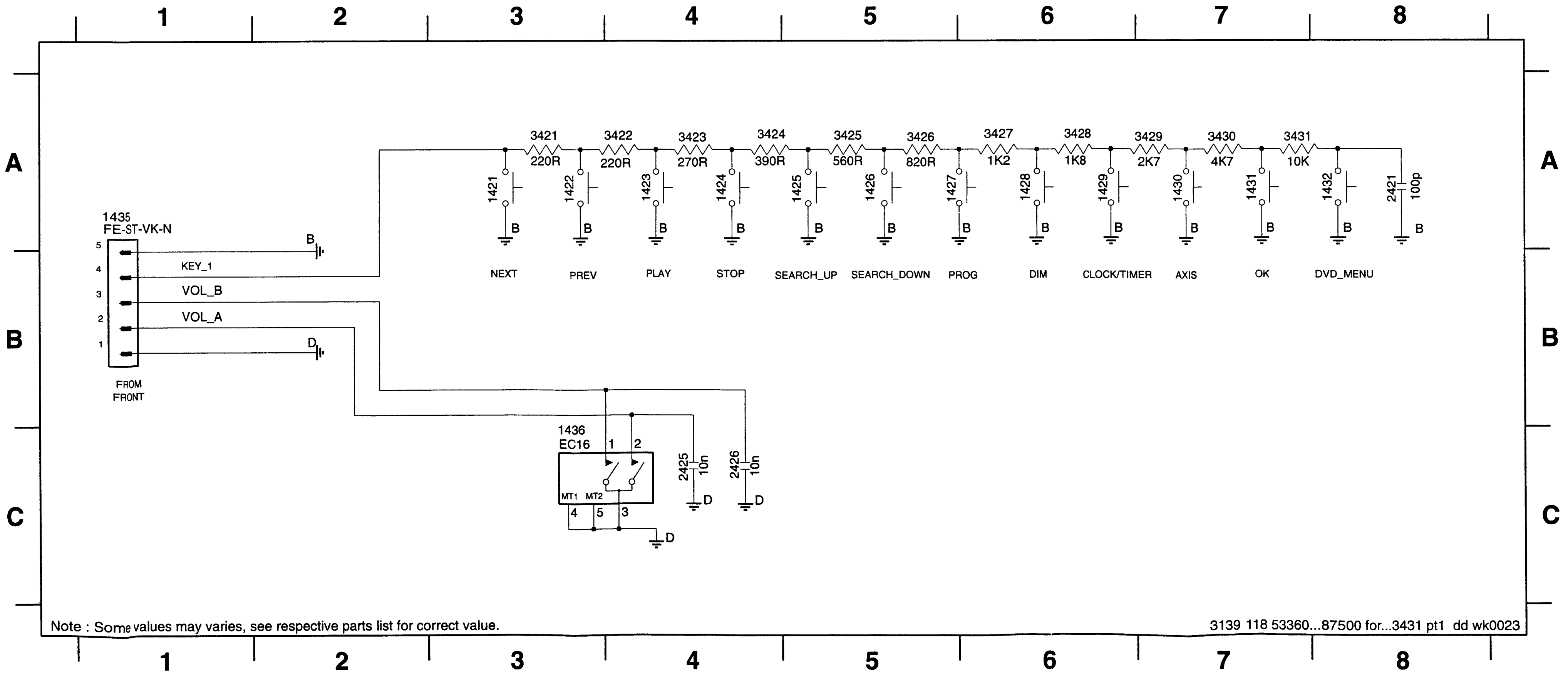
DVD LOGO LED BOARD - COMPONENT LAYOUT

1415 A1 6415 A1


1
A
This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.
8239_210_87850
6415
1415
FW-D1/panels/3139_113_34311_01
3139 113 3431 pt1 dd wk0023

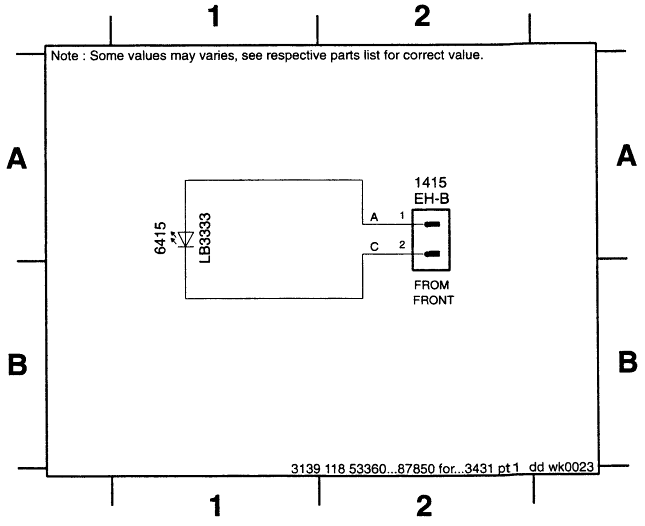
DECK KEY PART - CIRCUIT DIAGRAM

1421 A3 1423 A4 1425 A5 1427 A5 1429 A6 1431 A7 1435 A1 2421 A8 2426 C4 3422 A4 3424 A4 3426 A5 3428 A6 3430 A7
1422 A3 1424 A4 1426 A5 1428 A6 1430 A7 1432 A8 1436 C3 2425 C4 3421 A3 3423 A4 3425 A5 3427 A6 3429 A7 3431 A7


1
2
3
4
5
6
7
8
A
B
C
3421 220R
3422 220R
3423 270R
3424 390R
3425 560R
3426 820R
3427 1K2
3428 1K8
3429 2K7
3430 4K7
3431 10K
1421
1422
1423
1424
1425
1426
1427
1428
1429
1430
1431
1432
2421 100p
NEXT
PREV
PLAY
STOP
SEARCH_UP
SEARCH_DOWN
PROG
DIM
CLOCK/TIMER
AXIS
OK
DVD_MENU
1435 FE-ST-VK-N
KEY_1
VOL_B
VOL_A
FROM FRONT
1436 EC16
MT1 MT2
2425 10n
2426 10n
B
D
Note : Some values may varies, see respective parts list for correct value.
3139 118 53360...87500 for...3431 pt1 dd wk0023

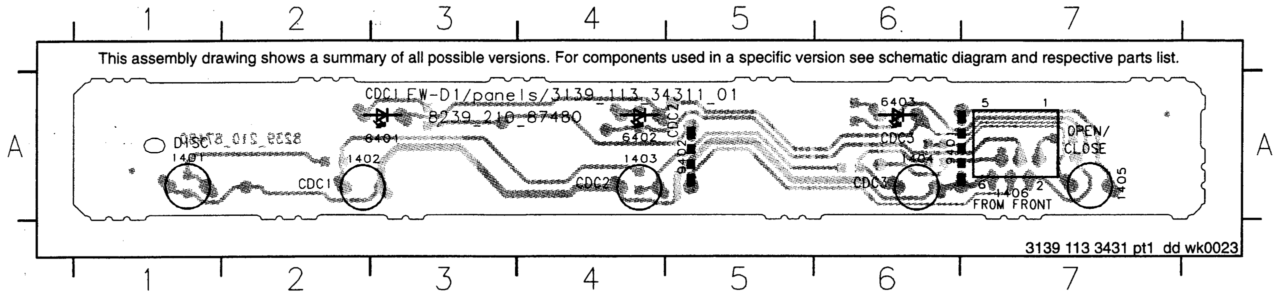
DVD LOGO LED PART - CIRCUIT DIAGRAM

1415 A2 6415 A1


1
2
A
B
Note : Some values may varies, see respective parts list for correct value.
6415
LB3333
1415 EH-B
FROM FRONT
3139 118 53360...87850 for...3431 pt1 dd wk0023

KEY CDC BOARD - COMPONENT LAYOUT

1401	A1
1402	A2
1403	A4
1404	A6
1405	A7
1406	A7
6401	A3
6402	A4
6403	A6
9401	A6
9402	A5

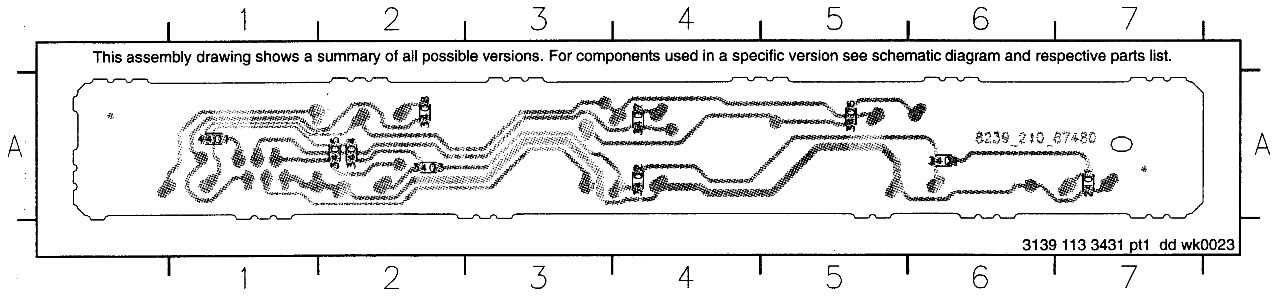

This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.

3139 113 3431 pt1 dd wk0023

1
2
3
4
5
6
7
A
CDC1 FW-D1/panels/3139_113_34311_01
8239_210_87480
DISC
1401
1402
CDC1
6401
6402
CDC2
1403
6403
CDC3
1404
OPEN/
CLOSE
1405
1406
FROM FRONT

KEY CDC BOARD - CHIP LAYOUT

2401	A7
3401	A6
3402	A4
3403	A2
3404	A2
3405	A2
3406	A5
3407	A4
3408	A2
4401	A1

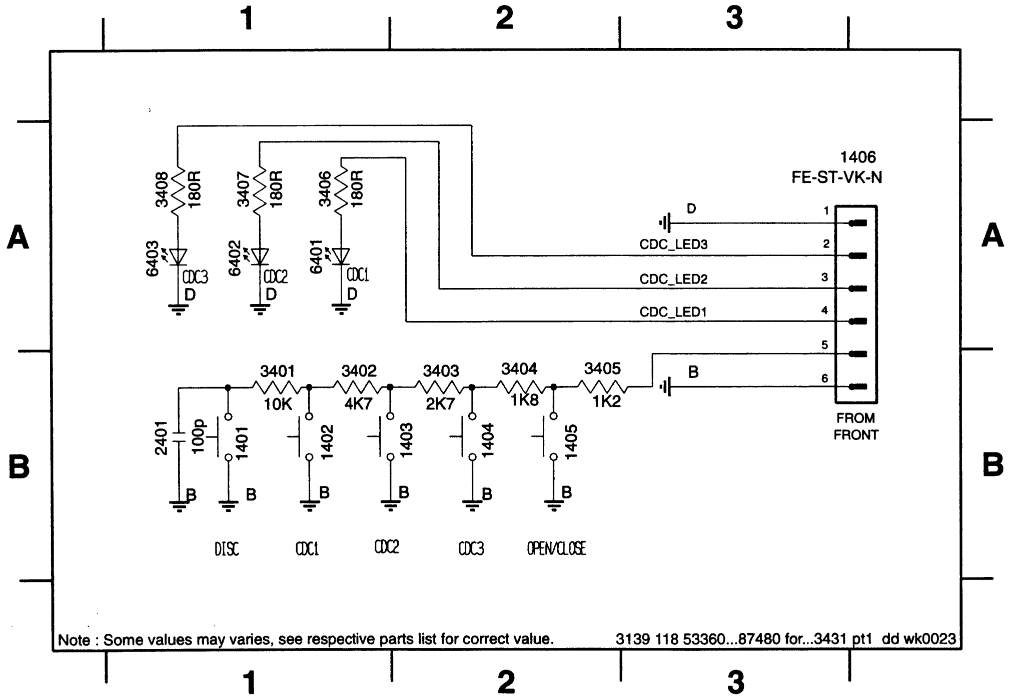

This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.

3139 113 3431 pt1 dd wk0023

1
2
3
4
5
6
7
A
8239_210_87480
4401
3403
2401

KEY CDC PART - CIRCUIT DIAGRAM

1401 B1	**1403 B2**	**1405 B2**	**2401 B1**	**3402 B1**	**3404 B2**	**3406 A1**	**3408 A1**	**6402 A1**
1402 B1	**1404 B2**	**1406 A3**	**3401 B1**	**3403 B2**	**3405 B2**	**3407 A1**	**6401 A1**	**6403 A1**

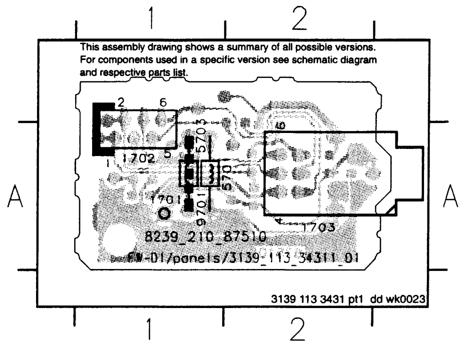

Note : Some values may varies, see respective parts list for correct value.

3139 118 53360...87480 for...3431 pt1 dd wk0023

1
2
3
A
B
1406
FE-ST-VK-N
3408
180R
3407
180R
3406
180R
6403
CDC3
6402
CDC2
6401
CDC1
D
CDC_LED3
CDC_LED2
CDC_LED1
3401
10K
3402
4K7
3403
2K7
3404
1K8
3405
1K2
2401
100p
1401
1402
1403
1404
1405
B
FROM
FRONT
DISC
CDC1
CDC2
CDC3
OPEN/CLOSE

HEADPHONE BOARD - COMPONENT LAYOUT

1701	A1	1703	A2	5703	A1
1702	A1	5701	A2	9701	A1

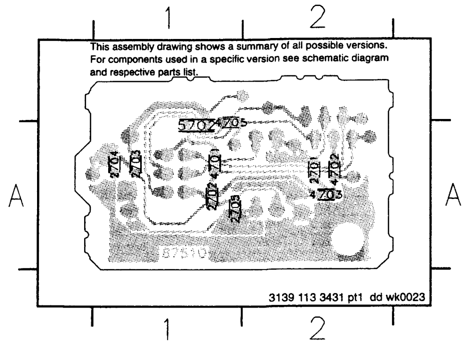

This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.

3139 113 3431 pt1 dd wk0023

1
2
A
1702
1701
5701
5703
9701
1703
8239_210_87510
FW-D1/panels/3139_113_34311_01

HEADPHONE BOARD - CHIP LAYOUT

2701	A2	2704	A1	4702	A2	5702	A1
2702	A1	2705	A1	4703	A2		
2703	A1	4701	A1	4705	A1		

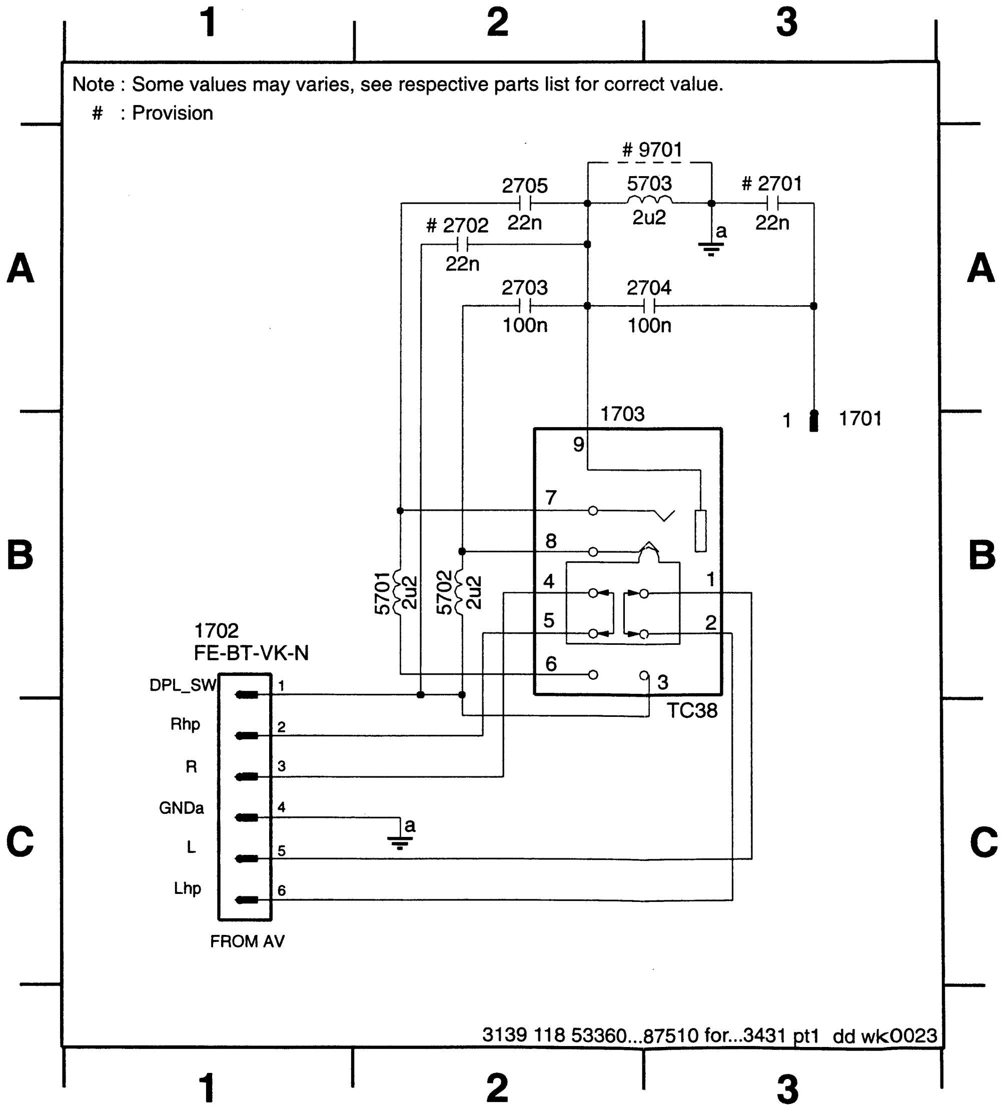

This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.

3139 113 3431 pt1 dd wk0023

1
2
A
5702
4705
2704
2703
4701
4702
2702
2701
4703
2705
87510

HEADPHONE PART - CIRCUIT DIAGRAM

1701 A3	**1703 B2**	**2702 A2**	**2704 A3**	**5701 B2**	**5703 A3**
1702 B1	**2701 A3**	**2703 A2**	**2705 A2**	**5702 B2**	**9701 A3**


Note : Some values may varies, see respective parts list for correct value.

: Provision

3139 118 53360...87510 for...3431 pt1 dd wk0023

1
2
3
A
B
C
# 9701
2705
22n
5703
2u2
# 2701
22n
# 2702
22n
a
2703
100n
2704
100n
1703
1701
5701
2u2
5702
2u2
TC38
1702
FE-BT-VK-N
DPL_SW
Rhp
R
GNDa
L
Lhp
FROM AV

FRONT BOARD - CIRCUIT DIAGRAM

41 H1
42 A4
43 I1
44 I1
1441 H6
1442 H6
1443 H5
1444 H5
1445 H5
1446 H4
1447 H4
1448 H3
1449 H3
1450 H2
1451 H2
1457 A11
1458 L10
1459 L12
1461 G6
1462 G6
1464 G5
1465 G4
1466 G4
1467 G4
1470 G19
1471 B18
1472 G19
1473 H19
1474 A1
1475 D1
1476 A1
1478 F1
1479 J13
2441 E8
2442 E9
2443 C14
2444 F15
2445 F14
2446 C14
2447 E10
2448 E9
2449 E9
2450 E11
2451 E10
2455 I10
2456 J11
2457 J11
2458 I15
2461 J12
2462 J13
2463 L11
2464 L11
2466 J3
2467 J3
2468 J3
2469 J2
2470 I2
2471 J4
2472 J5
2473 K1
2474 K1
2475 K1
2476 L1
2477 J6
2480 D5
2482 C6
2483 D4
2488 L13
2489 L13
2490 B2
2491 B2
2492 A3
2493 A3
2501 I9
2502 I9
2503 H9
2504 I9
2505 J9
2506 I8
2507 I8
2508 J8
2509 J12
2511 J17
2512 K17
2513 J17
2514 A16
2516 A17
2518 A18
2520 A19
2522 A20
2524 C20
2531 C16
2532 C17
2533 D10
2534 L17
2591 E18
3441 F12
3442 F12
3443 F12
3444 F12
3445 F12
3446 F12
3447 F12
3448 F12
3449 F12
3450 F12
3451 F12
3452 F13
3453 F13
3454 F13
3455 F13
3456 F13
3457 F13
3458 F13
3459 F13
3460 F13
3461 F13
3462 F13
3463 F13
3464 F13
3465 F13
3466 F14
3467 F14
3468 F14
3470 E14
3471 E14
3472 E14
3473 E14
3474 E14
3475 E14
3476 E14
3477 E14
3478 E14
3479 D14
3480 D14
3481 D14
3482 D14
3483 D14
3484 D14
3485 D14
3486 D14
3487 D14
3488 A7
3489 A6
3490 D14
3491 D14
3492 D14
3493 D13
3494 D13
3495 D13
3496 D13
3497 D13
3498 D13
3499 D13
3500 D13
3501 D13
3502 D13
3503 D13
3504 D13
3505 D13
3506 D13
3509 D12
3510 D12
3511 D12
3512 D12
3513 D12
3514 D12
3515 D12
3516 D12
3517 D12
3518 D12
3519 C9
3520 C9
3521 D9
3522 D9
3523 D9
3524 D9
3525 F10
3526 F10
3527 F10
3528 F10
3529 G10
3531 A3
3532 E9
3533 I11
3534 J11
3535 B3
3536 J14
3537 J14
3538 I14
3539 I15
3541 I12
3542 I12
3543 J13
3544 H15
3545 H14
3546 H14
3547 K11
3548 K11
3551 I2
3552 I2
3553 I2
3554 J2
3555 I3
3556 I3
3557 I2
3558 L6
3559 L6
3560 J3
3561 I2
3562 J4
3563 J5
3564 K6
3565 L6
3566 J3
3567 J4
3568 B8
3569 A7
3570 A2
3571 A2
3572 A2
3573 A2
3574 A2
3575 B2
3576 B2
3577 B3
3578 B2
3579 B3
3582 I16
3583 G6
3584 H6
3585 G6
3586 G6
3587 G5
3588 G5
3589 G4
3590 G4
3591 H6
3592 H6
3593 H5
3594 H5
3595 H4
3596 H4
3597 H3
3598 H3
3599 H3
3600 H2
3601 H2
3603 D6
3605 E5
3606 D5
3607 E5
3608 D5
3609 E5
3610 D4
3615 E2
3616 E2
3617 E2
3618 E2
3619 D2
3620 H9
3621 I9
3622 J9
3623 H9
3624 I9
3625 J8
3626 I9
3627 I9
3628 J9
3629 I8
3630 I8
3631 J8
3636 K13
3637 K13
3640 C18
3641 C18
3642 C17
3643 D17
3644 C16
3645 D18
3646 E17
3647 E17
3648 E17
3649 E17
3650 E17
3655 I17
3656 I17
3663 A16
3664 A17
3665 A18
3666 A19
3667 A20
3668 C20
3669 B6
3670 A5
3671 A5
3672 A5
3675 C14
3676 C14
3677 C14
3691 E18
3692 F16
3693 F16
3694 F17
3695 F16
3696 G17
3697 G17
3698 C8
3699 C8
3700 C10
3701 C11
3702 G17
3703 H16
3704 H16
4691 A2
4692 A2
4693 J16
4694 K16
4695 J12
5441 E10
5442 E11
5443 D8
5444 C15
5445 F15
5446 F14
5448 I14
5450 J5
5451 J4
6441 E5
6442 E5
6443 D5
6444 D5
6445 E5
6451 E2
6452 E2
6453 E2
6454 E2
6455 D2
6457 A7
6458 A6
6459 A5
6460 J12
6461 L16
6463 C15
6471 H9
6472 I9
6473 J9
6474 J9
7441 D14
7442 I13
7443 D5
7444 C3
7445 J2
7448 E9
7449 J11
7451 B7
7452 B5
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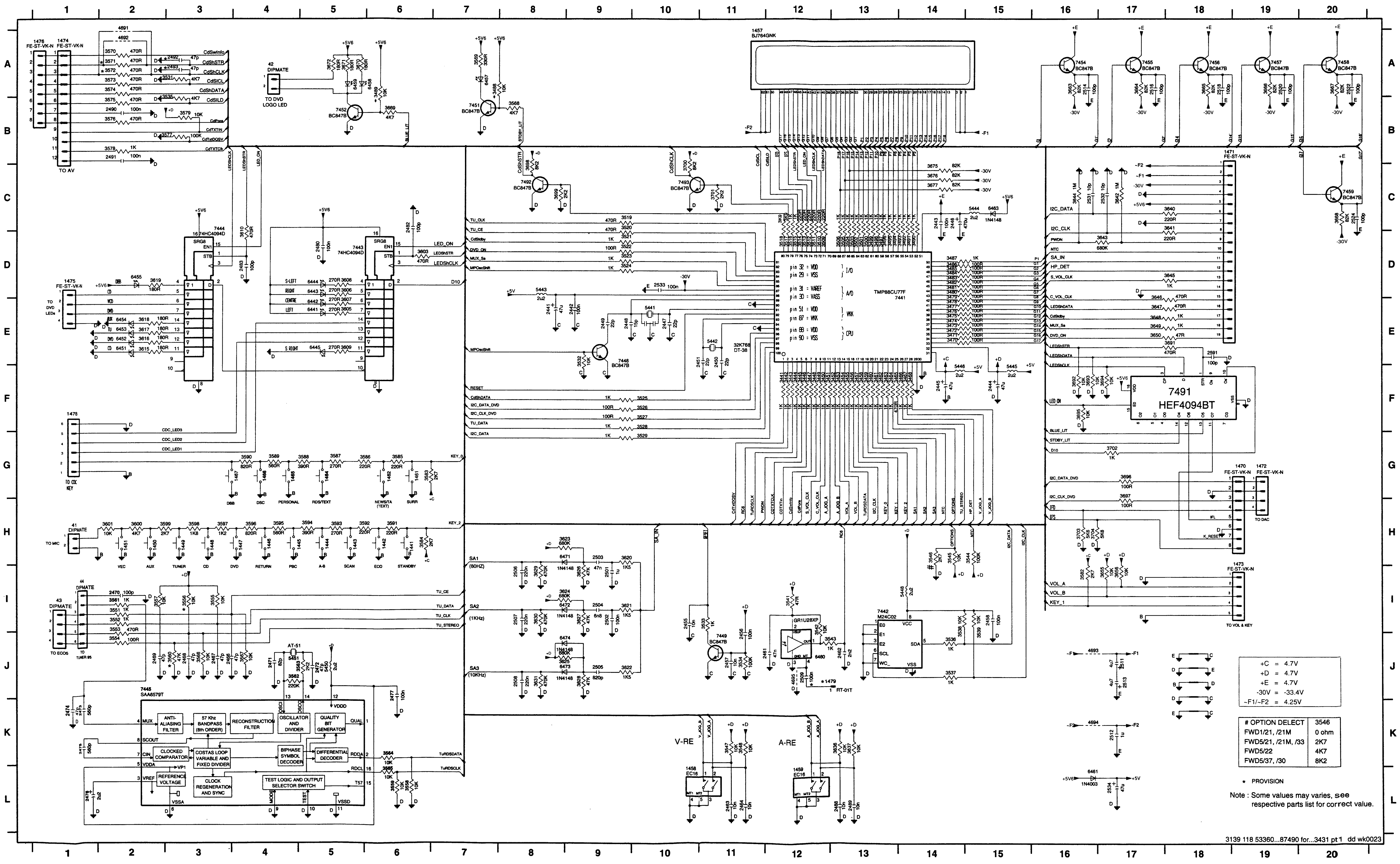
7455 A17
7456 A18
7457 A19
7458 A20
7459 C20
7491 F18
7492 C8
7493 C10


1476 FE-ST-VK-N
1474 FE-ST-VK-N
TO AV
42 DIPMATE
TO DVD LOGO LED
1475 FE-ST-VK-N
TO DVD LEDs
7444 74HC4094D
7443 74HC4094D
7452 BC847B
7451 BC847B
7492 BC847B
7493 BC847B
1457 BJ764GNK
7441 TMP88CU77F
7448 BC847B
32K768 DT-38
7454 BC847B
7455 BC847B
7456 BC847B
7457 BC847B
7458 BC847B
7459 BC847B
1471 FE-ST-VK-N
7491 HEF4094BT
1478
TO CDC KEY
DBB
DSC
PERSONAL
RDS/TEXT
NEWS/TA (TEXT)
SURR
41 DIPMATE
TO MIC
VEC
AUX
TUNER
CD
DVD
RETURN
PBC
A-B
SCAN
ECO
STANDBY
1470 FE-ST-VK-N
1472 FE-ST-VK-N
TO DAC
1473 FE-ST-VK-N
TO VOL & KEY
44 DIPMATE
43 DIPMATE
TO ECO5
TUNER 95
7445 SAA6579T
ANTI-ALIASING FILTER
57 Khz BANDPASS (8th ORDER)
RECONSTRUCTION FILTER
OSCILLATOR AND DIVIDER
QUALITY BIT GENERATOR
CLOCKED COMPARATOR
COSTAS LOOP VARIABLE AND FIXED DIVIDER
BIPHASE SYMBOL DECODER
DIFFERENTIAL DECODER
REFERENCE VOLTAGE
CLOCK REGENERATION AND SYNC
TEST LOGIC AND OUTPUT SELECTOR SWITCH
AT-51
SA1 (80HZ)
SA2 (1KHz)
SA3 (10KHz)
7449 BC847B
GR1U28XP
1479 RT-01T
7442 M24C02
V-RE
A-RE
1458 EC16
1459 EC16
1N4148
1N4003

+C	= 4.7V
+D	= 4.7V
+E	= 4.7V
-30V	= -33.4V
~F1/~F2	= 4.25V

# OPTION DELECT	3546
FWD1/21, /21M	0 ohm
FWD5/21, /21M, /33	2K7
FWD5/22	4K7
FWD5/37, /30	8K2

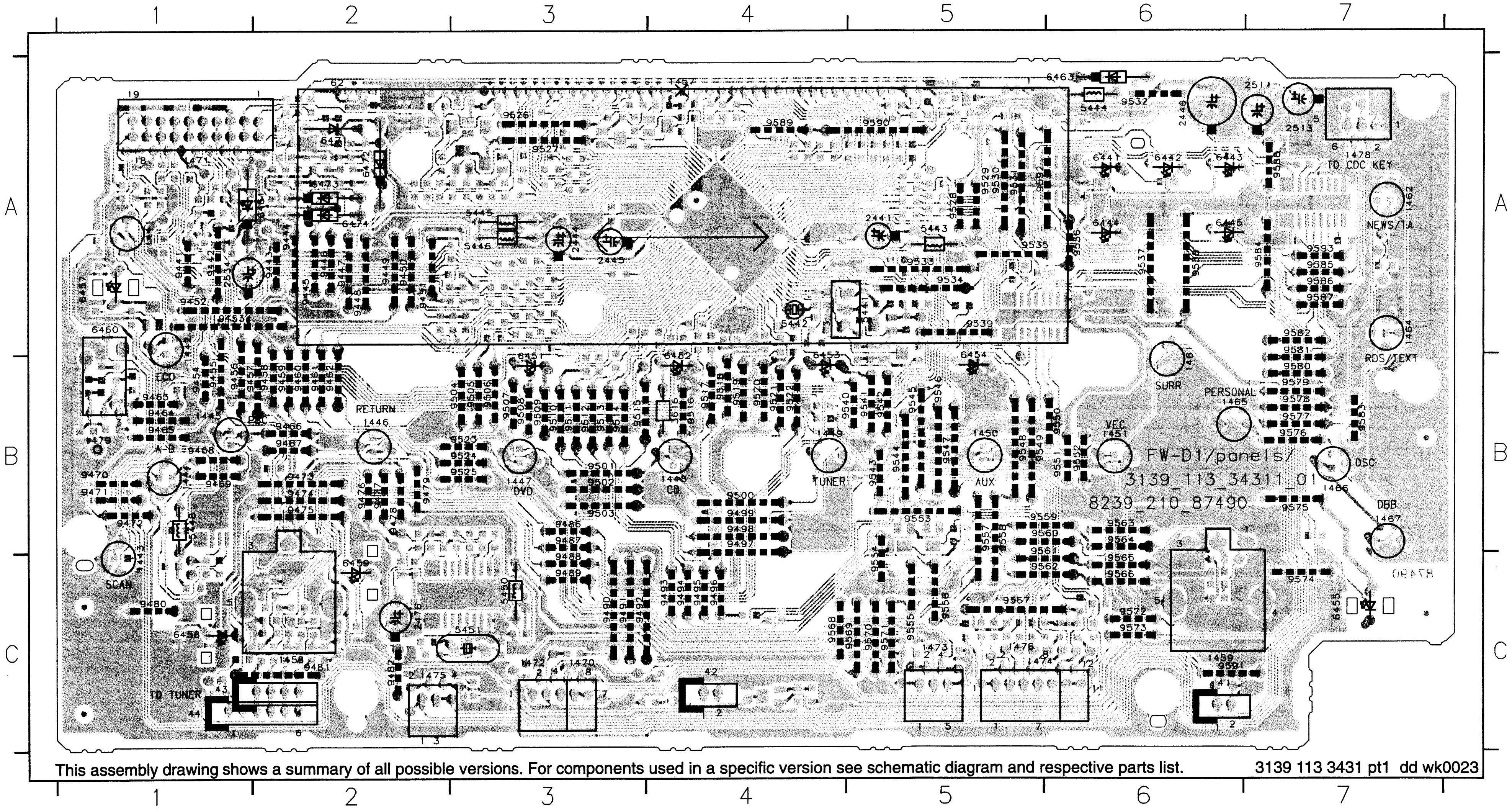
* PROVISION

Note : Some values may varies, see respective parts list for correct value.

3139 118 53360...87490 for...3431 pt1 dd wk0023

FRONT BOARD - COMPONENT LAYOUT

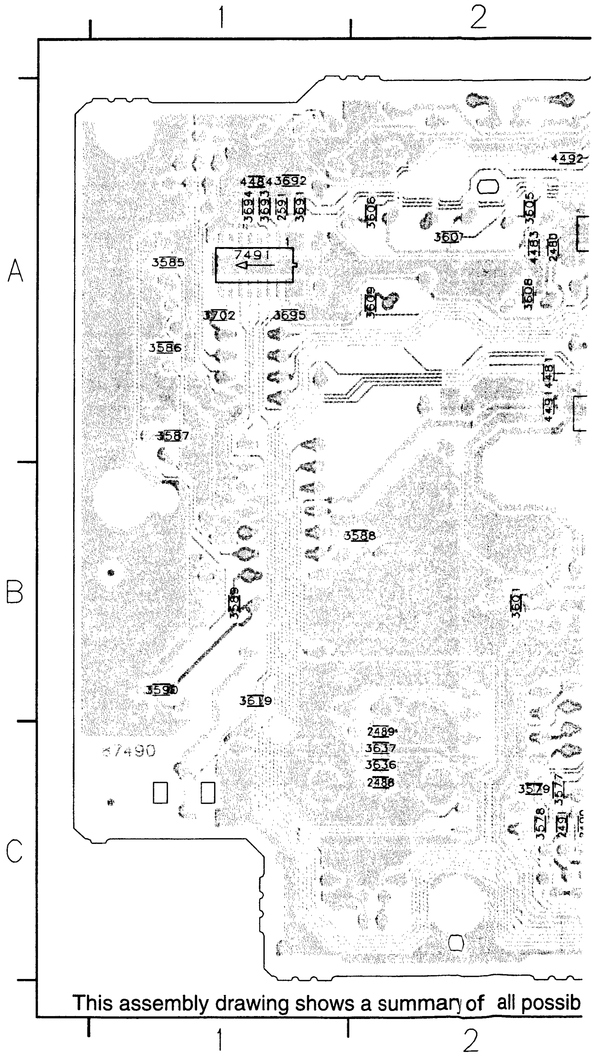
41	C6	1448	B4	1466	B7	2441	A5	5443	A5	6445	A6	6463	A6	9447	A2	9458	B2	9469	B1	9480	C1	9494	C4	9505	B3	9516	B4	9527	A3	9538	A6	9549	B5	9560	B6	9571	C5	9582	A7	9593	A7
42	C4	1449	B4	1467	B7	2444	A3	5444	A6	6451	B3	6471	A2	9448	A2	9459	B2	9470	B1	9481	C2	9495	C4	9506	B3	9517	B4	9528	A5	9539	A5	9550	B6	9561	B5	9572	C6	9583	B7		
43	C1	1450	B5	1470	C3	2445	A3	5445	A3	6452	B4	6472	A2	9449	A2	9460	B2	9471	B1	9482	C2	9496	C4	9507	B3	9518	B4	9529	A5	9540	B4	9551	B6	9562	C6	9573	C6	9584	A7		
44	C1	1451	B6	1471	A1	2446	A6	5446	A3	6453	B4	6473	A2	9450	A2	9461	B2	9472	B1	9486	B3	9497	B4	9508	B3	9519	B4	9530	A5	9541	B5	9552	B6	9563	B6	9574	C7	9585	A7		
1441	A1	1457	A4	1472	C3	2476	C2	5448	B1	6454	B5	6474	A2	9451	A2	9462	B2	9473	B2	9487	B3	9498	B4	9509	B3	9520	B4	9531	A5	9542	B5	9553	B5	9564	B6	9575	B7	9586	A7		
1442	A1	1458	C2	1473	C5	2511	A7	5450	C3	6455	C7	9441	A1	9452	A1	9463	B1	9474	B2	9488	C3	9499	B4	9510	B3	9521	B4	9532	A6	9543	B5	9554	C5	9565	C6	9576	B7	9587	A7		
1443	C1	1459	C6	1474	C5	2513	A7	5451	C3	6457	A1	9442	A1	9453	A1	9464	B1	9475	B2	9489	C3	9500	B4	9511	B3	9522	B4	9533	A5	9544	B5	9555	C5	9566	C6	9577	B7	9588	A7		
1444	B1	1461	B6	1475	C2	2534	A1	6441	A6	6458	C1	9443	A2	9454	B1	9465	B1	9476	B2	9490	C3	9501	B3	9512	B3	9523	B3	9534	A5	9545	B5	9556	C5	9567	C5	9578	B7	9589	A4		
1445	B1	1462	A7	1476	C5	3616	B4	6442	A6	6459	C2	9444	A2	9455	B1	9466	B2	9477	B2	9491	C3	9502	B3	9513	B3	9524	B3	9535	A5	9546	B5	9557	B5	9568	C4	9579	B7	9590	A5		
1446	B2	1464	A7	1478	A7	5441	A5	6443	A6	6460	A1	9445	A2	9456	B1	9467	B2	9478	B2	9492	C3	9503	B3	9514	B3	9525	B3	9536	A6	9547	B5	9558	B5	9569	C5	9580	B7	9591	C6		
1447	B3	1465	B6	1479	B1	5442	A4	6444	A6	6461	A2	9446	A2	9457	B1	9468	B1	9479	B2	9493	C4	9504	B3	9515	B3	9526	A3	9537	A6	9548	B5	9559	B5	9570	C5	9581	A7	9592	A5		



This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list. 3139 113 3431 pt1 dd wk0023

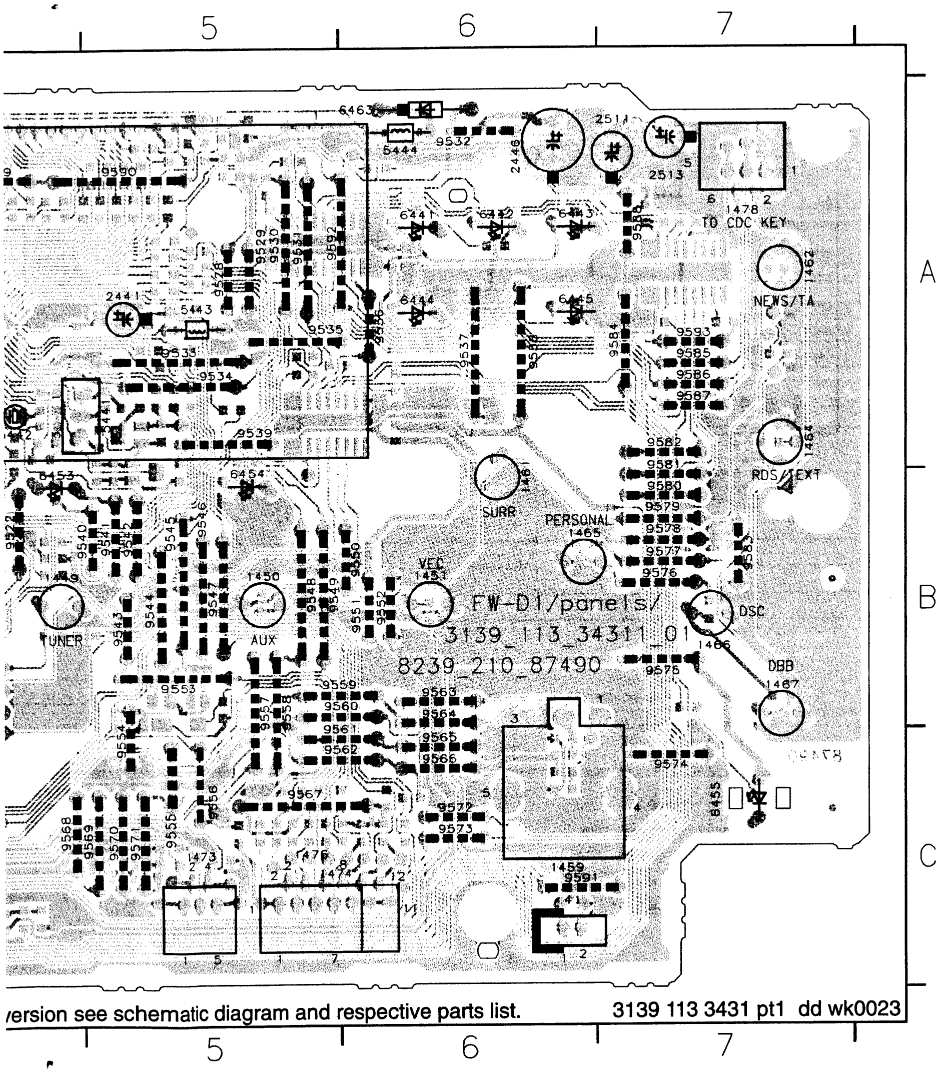
FRONT BOARD - CHIP LAYOUT

2442	A4	2468	C6	2493	C3	2531	A7	3454	A5	3472	A5
2443	A4	2469	C6	2501	A6	2532	A7	3455	A5	3473	A5
2447	A3	2470	C7	2502	A6	2533	A4	3456	A5	3474	A5
2448	A3	2471	C5	2503	A6	2591	A1	3457	A5	3475	A5
2449	A3	2472	C5	2504	A6	3441	A4	3458	A5	3476	A5
2450	A4	2473	B5	2505	A6	3442	A4	3459	A5	3477	A5
2451	A4	2474	B5	2506	A6	3443	A4	3460	A5	3478	A5
2455	A4	2475	B5	2507	A6	3444	A4	3461	A5	3479	A5
2456	A3	2477	C5	2508	A6	3445	A4	3462	A5	3480	A5
2457	A3	2480	A2	2509	B7	3446	A4	3463	A5	3481	A5
2458	B7	2482	A3	2512	A6	3447	A4	3464	A5	3482	A5
2461	B7	2483	A3	2514	A4	3448	B5	3465	A5	3483	A5
2462	B7	2488	C2	2516	A4	3449	A5	3466	A5	3484	A5
2463	B6	2489	C2	2518	A5	3450	A5	3467	A5	3485	A5
2464	B6	2490	C2	2520	A5	3451	B5	3468	A5	3486	A4
2466	C6	2491	C2	2522	A5	3452	B5	3470	A6	3487	A4
2467	C6	2492	C3	2524	A6	3453	A5	3471	A6	3488	A7



This assembly drawing shows a summary of all possib

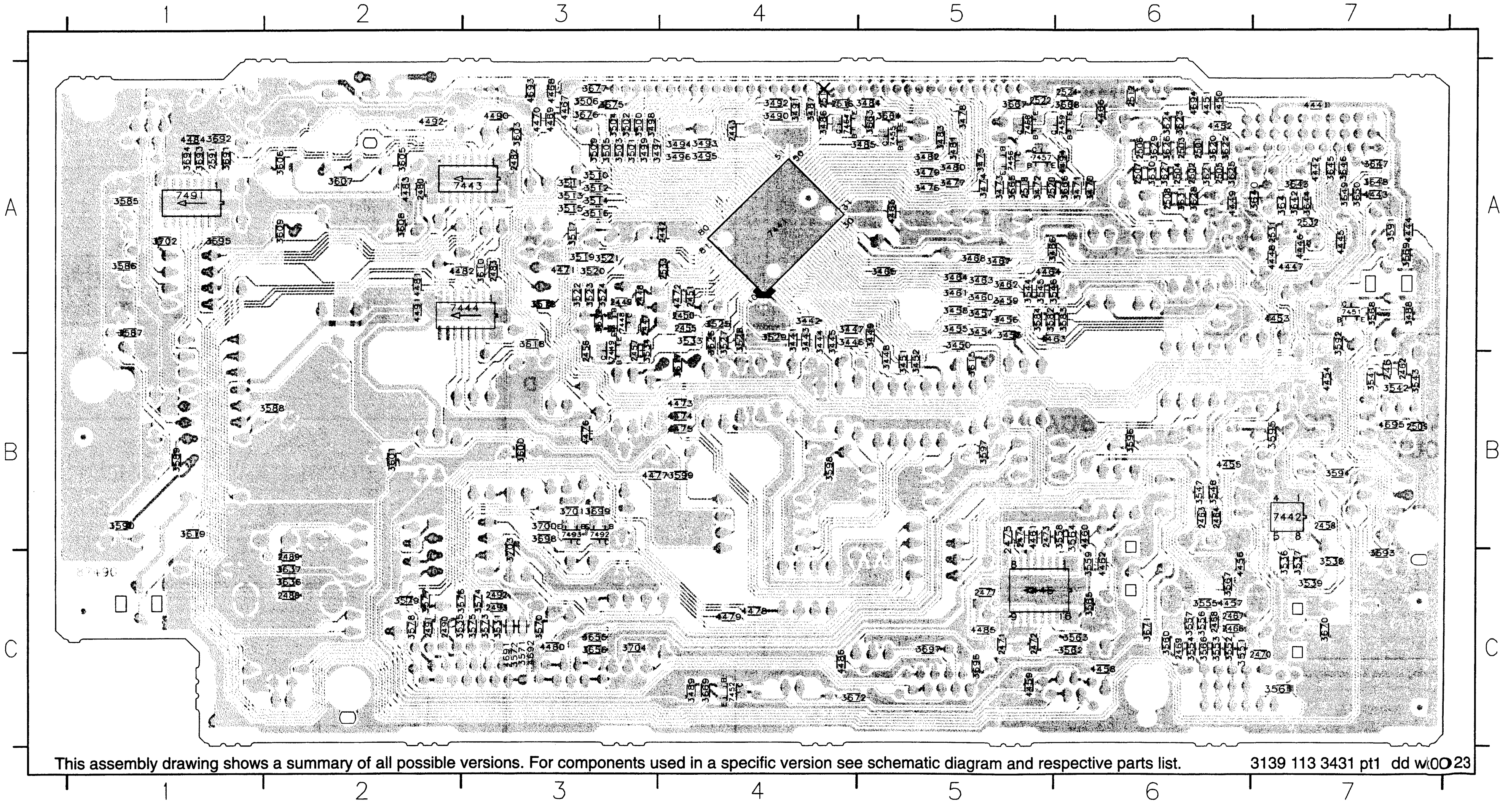
9494	C4	9505	B3	9516	B4	9527	A3	9538	A6	9549	B5	9560	B6	9571	C5	9582	A7	9593	A7
9495	C4	9506	B3	9517	B4	9528	A5	9539	A5	9550	B6	9561	B5	9572	C6	9583	B7		
9496	C4	9507	B3	9518	B4	9529	A5	9540	B4	9551	B6	9562	C6	9573	C6	9584	A7		
9497	B4	9508	B3	9519	B4	9530	A5	9541	B5	9552	B6	9563	B6	9574	C7	9585	A7		
9498	B4	9509	B3	9520	B4	9531	A5	9542	B5	9553	B5	9564	B6	9575	B7	9586	A7		
9499	B4	9510	B3	9521	B4	9532	A6	9543	B5	9554	C5	9565	C6	9576	B7	9587	A7		
9500	B4	9511	B3	9522	B4	9533	A5	9544	B5	9555	C5	9566	C6	9577	B7	9588	A7		
9501	B3	9512	B3	9523	B3	9534	A5	9545	B5	9556	C5	9567	C5	9578	B7	9589	A4		
9502	B3	9513	B3	9524	B3	9535	A5	9546	B5	9557	B5	9568	C4	9579	B7	9590	A5		
9503	B3	9514	B3	9525	B3	9536	A6	9547	B5	9558	B5	9569	C5	9580	B7	9591	C6		
9504	B3	9515	B3	9526	A3	9537	A6	9548	B5	9559	B5	9570	C5	9581	A7	9592	A5		



ersion see schematic diagram and respective parts list. 3139 113 3431 pt1 dd wk0023

FRONT BOARD - CHIP LAYOUT

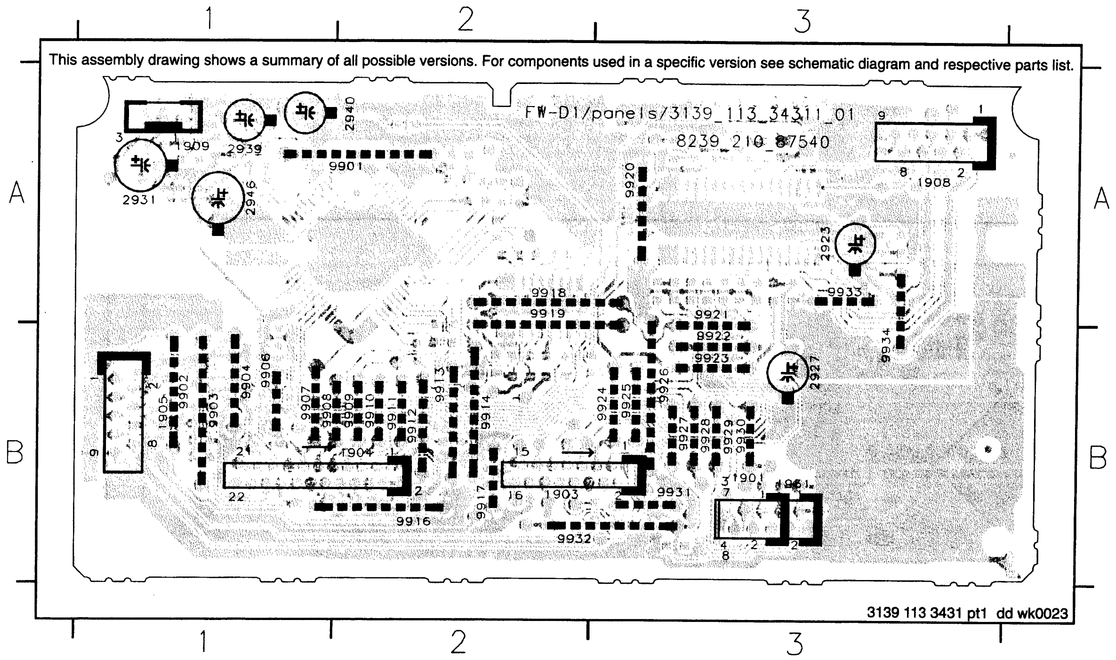
2442	A4	2468	C6	2493	C3	2531	A7	3454	A5	3472	A5	3489	C4	3506	A3	3525	A4	3544	A5	3563	C6	3582	A5	3599	B4	3623	A6	3646	A7	3675	A3	4441	A7	4458	C6	4475	B4	4692	C3	7458	A5
2443	A4	2469	C6	2501	A6	2532	A7	3455	A5	3473	A5	3490	A4	3509	A3	3526	A4	3545	A5	3564	B6	3583	A6	3600	B3	3624	A6	3647	A7	3676	A3	4442	A7	4459	C5	4476	B3	4693	A3	7459	A6
2447	A3	2470	C7	2502	A6	2533	A4	3456	A5	3474	A5	3491	A4	3510	A3	3527	A4	3546	A5	3565	C6	3584	A5	3601	B2	3625	A6	3648	A7	3677	A3	4443	A7	4460	B6	4477	B3	4694	A6	7491	A1
2448	A3	2471	C5	2503	A6	2591	A1	3457	A5	3475	A5	3492	A4	3511	A3	3528	A4	3547	B6	3566	C6	3585	A1	3603	A3	3626	A6	3649	A7	3691	A1	4444	A7	4461	B5	4478	C4	4695	B7	7492	B3
2449	A3	2472	C5	2504	A6	3441	A4	3458	A5	3476	A5	3493	A4	3512	A3	3529	A4	3548	B6	3567	C6	3586	A1	3605	A2	3627	A6	3650	A7	3692	A1	4445	A7	4462	C6	4479	C4	7441	A4	7493	B3
2450	A4	2473	B5	2505	A6	3442	A4	3459	A5	3477	A5	3494	A4	3513	A3	3531	C3	3551	C6	3568	A7	3587	A1	3606	A2	3628	A6	3655	C3	3693	A1	4446	A7	4463	A5	4480	C3	7442	B7		
2451	A4	2474	B5	2506	A6	3443	A4	3460	A5	3478	A5	3495	A4	3514	A3	3532	A3	3552	C6	3569	A7	3588	B2	3607	A2	3629	A6	3656	C3	3694	A1	4447	A7	4464	A5	4481	A2	7443	A3		
2455	A4	2475	B5	2507	A6	3444	A4	3461	A5	3479	A5	3496	A4	3515	A3	3533	A4	3553	C6	3570	C3	3589	B1	3608	A2	3630	A6	3663	A5	3695	A1	4448	A7	4465	A5	4482	A2	7444	A3		
2456	A3	2477	C5	2508	A6	3445	A4	3462	A5	3480	A5	3497	A3	3516	A3	3534	A3	3554	C6	3571	C3	3590	B1	3609	A2	3631	A6	3664	A5	3696	C5	4449	A6	4466	A6	4483	A2	7445	C5		
2457	A3	2480	A2	2509	B7	3446	A4	3463	A5	3481	A5	3498	A3	3517	A3	3535	C2	3555	C6	3572	C3	3591	A7	3610	A3	3636	C2	3665	A5	3697	C5	4450	A6	4467	A3	4484	A1	7448	A3		
2458	B7	2482	A3	2512	A6	3447	A4	3464	A5	3482	A5	3499	A3	3518	A3	3536	C7	3556	C6	3573	C3	3592	A7	3615	B5	3637	C2	3666	A6	3698	B3	4451	A6	4468	A3	4485	C5	7449	A3		
2461	B7	2483	A3	2514	A4	3448	B5	3465	A5	3483	A5	3500	A3	3519	A3	3537	C7	3557	C6	3574	C3	3593	C7	3617	B4	3640	A7	3667	A5	3699	B3	4452	A6	4469	A3	4486	C4	7451	A7		
2462	B7	2488	C2	2516	A4	3449	A5	3466	A5	3484	A5	3501	A3	3520	A3	3538	C7	3558	B6	3575	C3	3594	B7	3618	A3	3641	A7	3668	A6	3700	B3	4453	A7	4470	A3	4490	A3	7452	C4		
2463	B6	2489	C2	2518	A5	3450	A5	3467	A5	3485	A5	3502	A3	3521	A3	3539	C7	3559	C6	3576	C2	3595	B7	3619	B1	3642	A7	3669	C4	3701	B3	4454	B7	4471	A3	4491	A2	7454	A4		
2464	B6	2490	C2	2520	A5	3451	B5	3468	A5	3486	A4	3503	A3	3522	A3	3541	B7	3560	C6	3577	C2	3596	B6	3620	A6	3643	A7	3670	C7	3702	A1	4455	B6	4472	A4	4492	A2	7455	A5		
2466	C6	2491	C2	2522	A5	3452	B5	3470	A6	3487	A4	3504	A3	3523	A3	3542	B7	3561	C7	3578	C2	3597	B5	3621	A6	3644	A7	3671	C6	3703	C3	4456	C6	4473	B4	4494	A6	7456	A5		
2467	C6	2492	C3	2524	A6	3453	A5	3471	A6	3488	A7	3505	A3	3524	A3	3543	B7	3562	C6	3579	C2	3598	B4	3622	A6	3645	A7	3672	C4	3704	C3	4457	C6	4474	B4	4691	C3	7457	A5		



This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list. 3139 113 3431 pt1 dd wk0023

DIGITAL ANALOG CONVERTOR (DAC) BOARD - COMPONENT LAYOUT

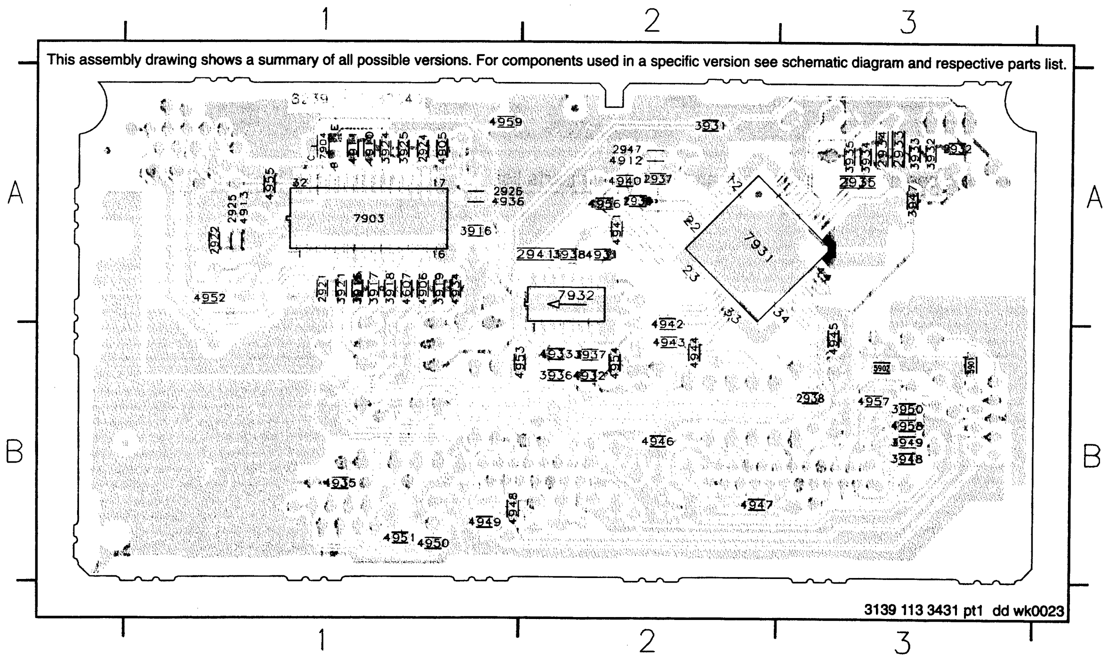
1901 B3	1909 A1	2939 A1	9903 B1	9909 B2	9914 B2	9920 A3	9925 B3	9930 B3
1903 B2	1931 B3	2940 A2	9904 B1	9910 B2	9916 B2	9921 A3	9926 B3	9931 B3
1904 B2	2923 A3	2946 A1	9906 B1	9911 B2	9917 B2	9922 B3	9927 B3	9932 B2
1905 B1	2927 B3	9901 A2	9907 B1	9912 B2	9918 A2	9923 B3	9928 B3	9933 A3
1908 A3	2931 A1	9902 B1	9908 B1	9913 B2	9919 A2	9924 B3	9929 B3	9934 B3


This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.

1
2
3
A
B
FW-D1/panels/3139_113_34311_01
8239_210_87540
1909
2939
2940
2931
2946
9901
1908
9920
2923
9918
9919
9921
9922
9923
9933
9934
2927
1905
1904
1903
9916
9932
9931
1901
3139 113 3431 pt1 dd wk0023

DIGITAL ANALOG CONVERTOR (DAC) BOARD - CHIP LAYOUT

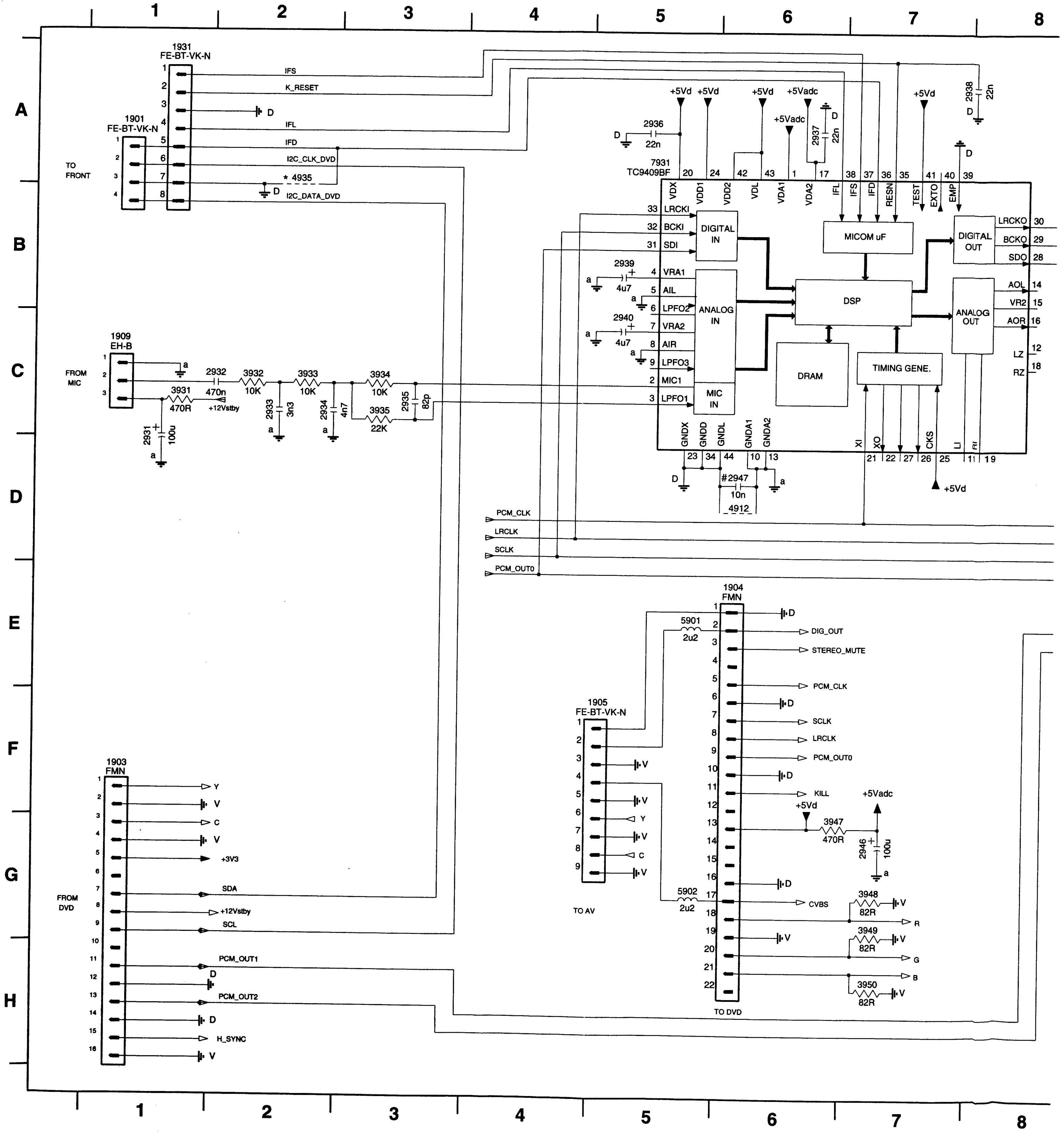
2921 A1	2935 A3	3917 A1	3933 A3	3949 B3	4913 A1	4941 A2	4949 B1	4957 B3	7932 A2
2922 A1	2936 A2	3918 A1	3934 A3	3950 B3	4931 A2	4942 B2	4950 B1	4958 B3	
2924 A1	2937 A2	3919 A1	3935 A3	4607 A1	4932 B2	4943 B2	4951 B1	4959 A1	
2925 A1	2938 B3	3921 A1	3936 B2	4905 A1	4933 B2	4944 B2	4952 A1	5901 B3	
2926 A1	2941 A2	3924 A1	3937 B2	4906 A1	4934 A1	4945 B3	4953 B2	5902 B3	
2932 A3	2947 A2	3925 A1	3938 A2	4910 A1	4935 B1	4946 B2	4954 B2	7903 A1	
2933 A3	3915 A1	3931 A2	3947 A3	4911 A1	4936 A1	4947 B2	4955 A1	7904 A1	
2934 A3	3916 A1	3932 A3	3948 B3	4912 A2	4940 A2	4948 B1	4956 A2	7931 A2	


This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.

1
2
3
A
B
7903
7931
7932
4959
2926
4936
2947
4912
3916
4952
3950
3949
3948
3947
4950
3139 113 3431 pt1 dd wk0023

DIGITAL ANALOG CONVERTOR (DAC) PART - CIRCUIT DIAGRAM

1901 A1	1904 E6	1908 D14	1931 A1	2922 E12	2924 B12	2926 C14	2931 D1	2933 C2	2935 C3	2937 A6	2939 B5	2941 A10	2947 D6	3916 B11	3918 C11	3921 D12	3925 B14	3932 C2
1903 F1	1905 F4	1909 C1	2921 E12	2923 E13	2925 B13	2927 E12	2932 C2	2934 C2	2936 A5	2938 A7	2940 C5	2946 G7	3915 B11	3917 B11	3919 C11	3924 B14	3931 C1	3933 C2


1
2
3
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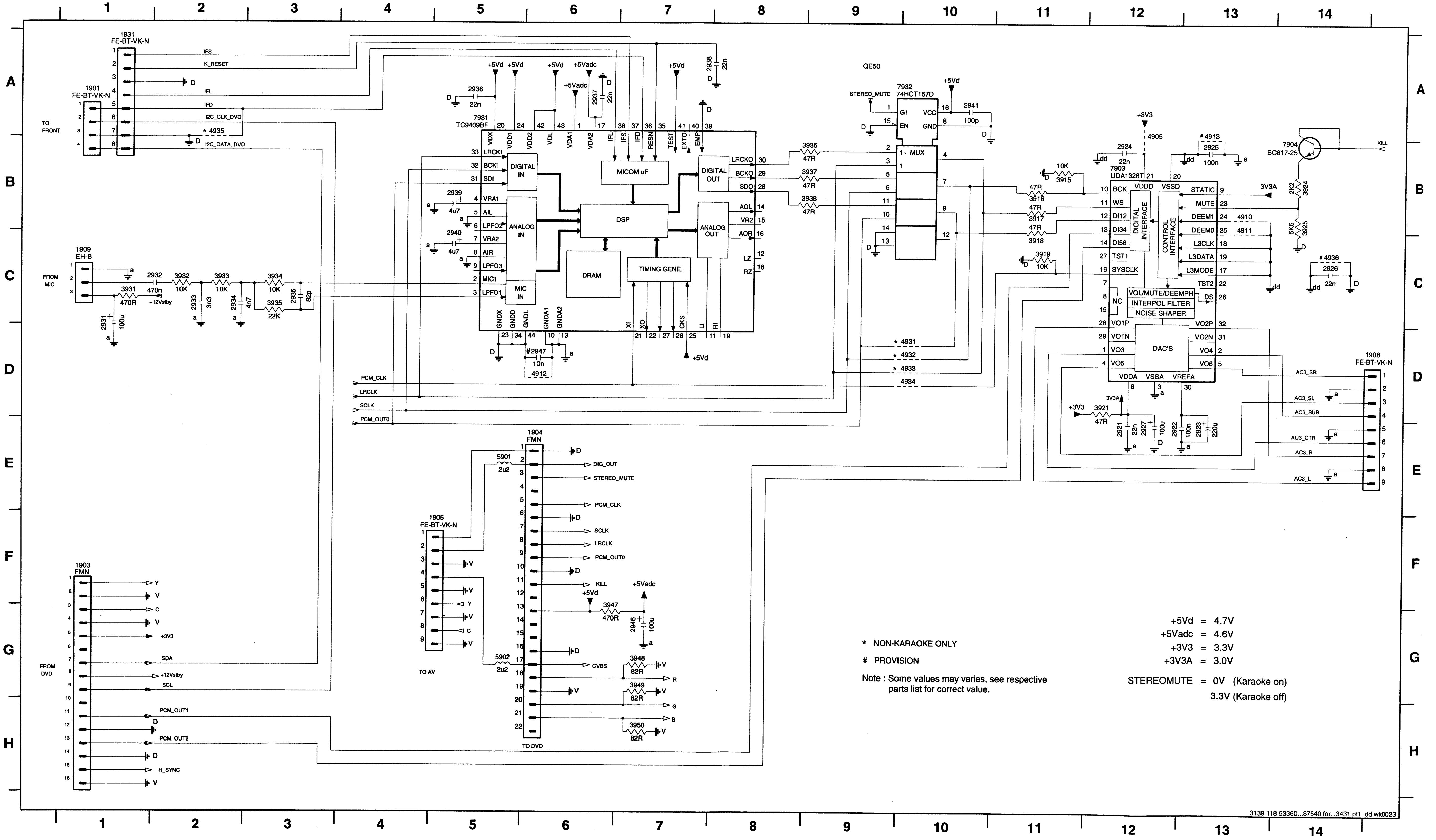
5
6
7
8
A
B
C
D
E
F
G
H
1931
FE-BT-VK-N
1901
FE-BT-VK-N
TO FRONT
IFS
K_RESET
IFL
IFD
I2C_CLK_DVD
* 4935
I2C_DATA_DVD
7931
TC9409BF
+5Vd
+5Vadc
2936
22n
2937
22n
2938
22n
VDX
VDD1
VDD2
VDL
VDA1
VDA2
IFL
IFS
IFD
RESN
TEST
EXTO
EMP
LRCKI
BCKI
SDI
DIGITAL IN
MICOM uF
DIGITAL OUT
LRCKO
BCKO
SDO
VRA1
AIL
LPFO2
VRA2
AIR
LPFO3
MIC1
LPFO1
ANALOG IN
MIC IN
DSP
DRAM
TIMING GENE.
ANALOG OUT
AOL
VR2
AOR
LZ
RZ
2939
4u7
2940
4u7
1909
EH-B
FROM MIC
2932
470n
3932
10K
3933
10K
3934
10K
3931
470R
+12Vstby
2933
3n3
2934
4n7
3935
22K
2935
82p
2931
100u
GNDX
GNDD
GNDL
GNDA1
GNDA2
XI
XO
CKS
LI
RI
#2947
10n
4912
PCM_CLK
LRCLK
SCLK
PCM_OUT0
1904
FMN
5901
2u2
DIG_OUT
STEREO_MUTE
PCM_CLK
SCLK
LRCLK
PCM_OUT0
KILL
+5Vd
+5Vadc
3947
470R
2946
100u
5902
2u2
CVBS
3948
82R
R
3949
82R
G
B
3950
82R
TO DVD
1905
FE-BT-VK-N
Y
C
TO AV
1903
FMN
FROM DVD
Y
V
C
+3V3
SDA
+12Vstby
SCL
PCM_OUT1
PCM_OUT2
H_SYNC
D
a

DIGITAL ANALOG CONVERTOR (DAC) PART - CIRCUIT DIAGRAM

1901	A1
1903	F1
1904	E6
1905	F4
1908	D14
1909	C1
1931	A1
2921	E12
2922	E12
2923	E13
2924	B12
2925	B13
2926	C14
2927	E12
2931	D1
2932	C2
2933	C2
2934	C2
2935	C3
2936	A5
2937	A6
2938	A7
2939	B5
2940	C5
2941	A10
2946	G7
2947	D6
3915	B11
3916	B11
3917	B11
3918	C11
3919	C11
3921	D12
3924	B14
3925	B14
3931	C1
3932	C2
3933	C2
3934	C3
3935	C3
3936	B9
3937	B9
3938	B9
3947	G6
3948	G7
3949	G7
3950	H7
4905	A12
4910	B13
4911	B13
4912	D6
4913	A13
4931	D10
4932	D10
4933	D10
4934	D10
4935	A2
4936	C14
5901	E5
5902	G5
7903	B12
7904	B14
7931	A5
7932	A9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3
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7
8
9
10
11
12
13
14
A
B
C
D
E
F
G
H
1931
FE-BT-VK-N
1901
FE-BT-VK-N
TO FRONT
IFS
K_RESET
IFL
IFD
I2C_CLK_DVD
* 4935
I2C_DATA_DVD
1909
EH-B
FROM MIC
2932
470n
3932
10K
3933
10K
3934
10K
3931
470R
+12Vstby
2931
100u
2933
3n3
2934
4n7
3935
22K
2935
82p
7931
TC9409BF
+5Vd
+5Vadc
2936
22n
2937
22n
2938
22n
VDX
VDD1
VDD2
VDL
VDA1
VDA2
IFL
IFS
IFD
RESN
TEST
EXTO
EMP
LRCKI
BCKI
SDI
VRA1
AIL
LPFO2
VRA2
AIR
LPFO3
MIC1
LPFO1
DIGITAL IN
ANALOG IN
MIC IN
MICOM uF
DSP
DRAM
TIMING GENE.
DIGITAL OUT
ANALOG OUT
LRCKO
BCKO
SDO
AOL
VR2
AOR
LZ
RZ
GNDX
GNDD
GNDL
GNDA1
GNDA2
XI
XO
CKS
LI
RI
2939
4u7
2940
4u7
#2947
10n
4912
PCM_CLK
LRCLK
SCLK
PCM_OUT0
QE50
STEREO_MUTE
7932
74HCT157D
G1
EN
VCC
GND
1- MUX
2941
100p
3936
47R
3937
47R
3938
47R
* 4931
* 4932
* 4933
4934
+3V3
4905
7903
UDA1328T
2924
22n
#4913
2925
100n
10K
3915
3916
47R
3917
47R
3918
47R
3919
10K
BCK
WS
DI12
DI34
DI56
TST1
SYSCLK
NC
VDDD
VSSD
DIGITAL INTERFACE
CONTROL INTERFACE
STATIC
MUTE
DEEM1
DEEM0
L3CLK
L3DATA
L3MODE
TST2
DS
4910
4911
VOL/MUTE/DEEMPH
INTERPOL FILTER
NOISE SHAPER
VO1P
VO1N
VO3
VO5
VO2P
VO2N
VO4
VO6
DAC'S
VDDA
VSSA
VREFA
3V3A
3921
47R
2921
22n
2927
100u
2922
100n
2923
220u
7904
BC817-25
KILL
2K2
3924
5K6
3925
#4936
2926
22n
1908
FE-BT-VK-N
AC3_SR
AC3_SL
AC3_SUB
AU3_CTR
AC3_R
AC3_L
1904
FMN
5901
2u2
DIG_OUT
STEREO_MUTE
PCM_CLK
SCLK
LRCLK
PCM_OUT0
KILL
+5Vd
+5Vadc
3947
470R
2946
100u
5902
2u2
CVBS
3948
82R
3949
82R
3950
82R
R
G
B
TO DVD
1905
FE-BT-VK-N
Y
C
V
TO AV
1903
FMN
FROM DVD
+3V3
SDA
+12Vstby
SCL
PCM_OUT1
PCM_OUT2
H_SYNC

* NON-KARAOKE ONLY

# PROVISION

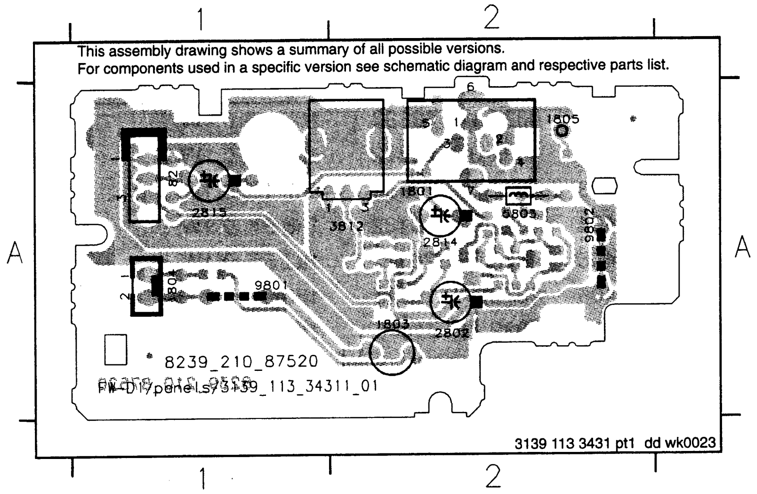
Note : Some values may varies, see respective
parts list for correct value.

+5Vd = 4.7V
+5Vadc = 4.6V
+3V3 = 3.3V
+3V3A = 3.0V

STEREOMUTE = 0V (Karaoke on)
3.3V (Karaoke off)

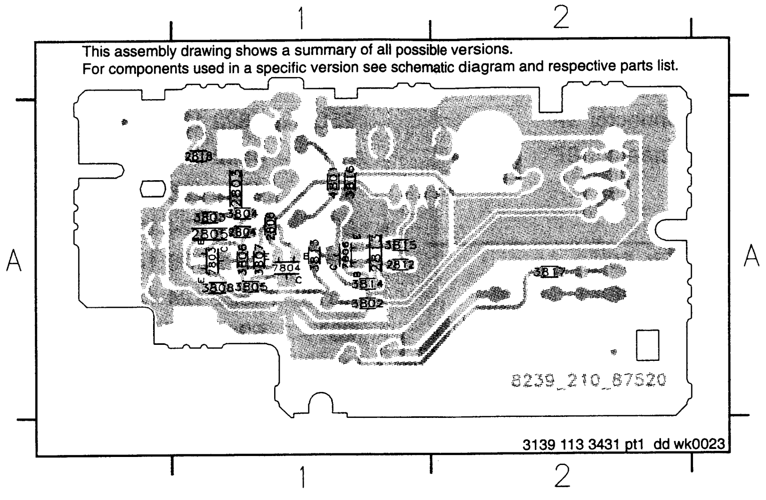
MIC. & DVD OPEN/CLOSE BOARD - COMPONENT LAYOUT

82	A1	1803	A2	1805	A2	2814	A2	3812	A2	9801	A1
1801	A2	1804	A1	2802	A2	2815	A1	5803	A2	9802	A2


1
2
A
This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram and respective parts list.
1805
1801
2815
3812
5803
2814
9801
1803
2802
8239_210_87520
FW-D1/panels/3139_113_34311_01
3139 113 3431 pt1 dd wk0023

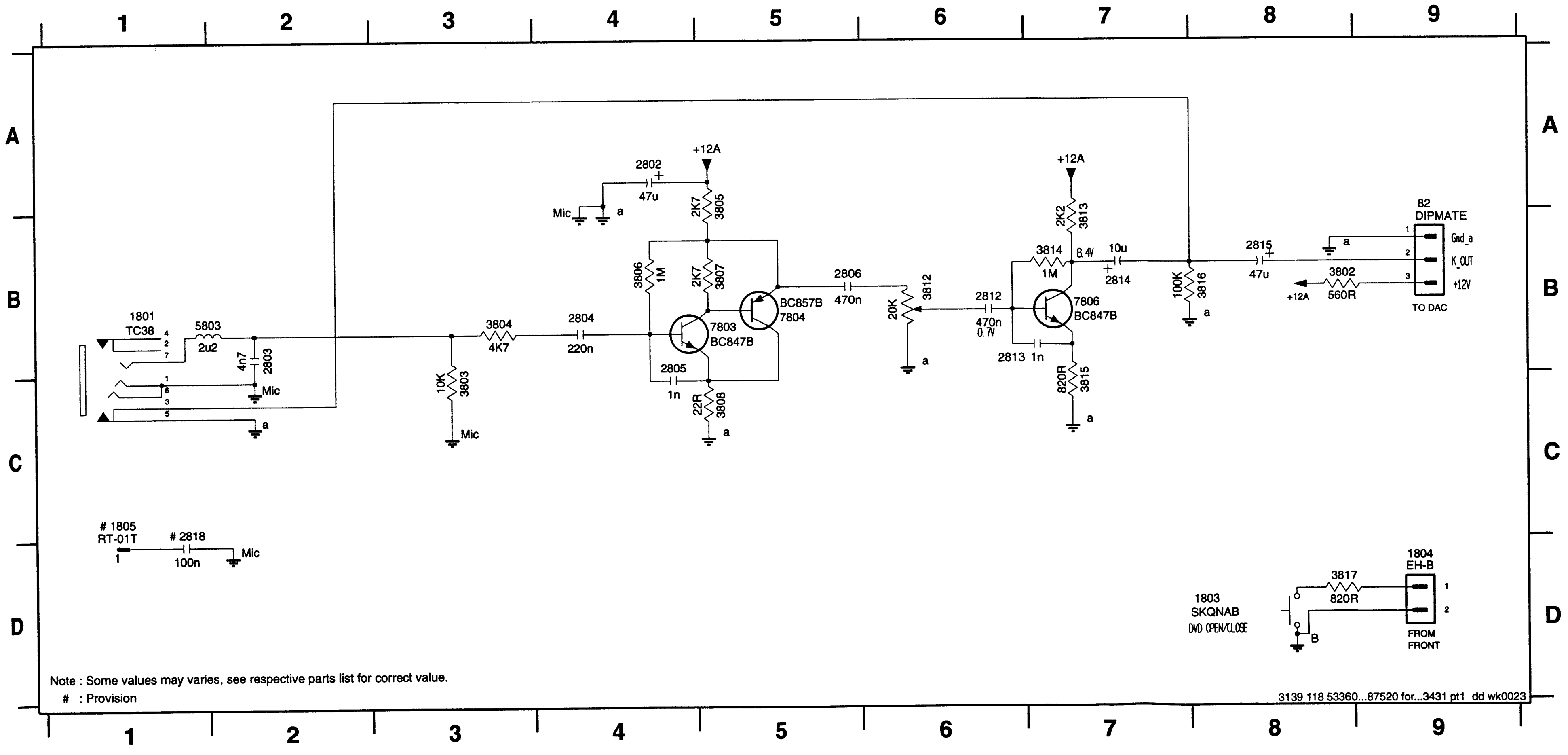
MIC. & DVD OPEN/CLOSE BOARD - CHIP LAYOUT

2803	A1	2812	A1	3803	A1	3807	A1	3815	A1	7803	A1
2804	A1	2813	A1	3804	A1	3808	A1	3816	A1	7804	A1
2805	A1	2818	A1	3805	A1	3813	A1	3817	A2	7806	A1
2806	A1	3802	A1	3806	A1	3814	A1	4801	A1		


1
2
A
This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram and respective parts list.
8239_210_87520
3139 113 3431 pt1 dd wk0023

MIC. & DVD OPEN/CLOSE PART - CIRCUIT DIAGRAM

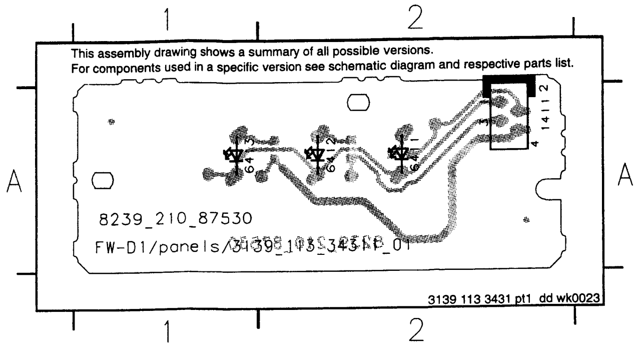
82	B9	1803	D8	1805	C1	2803	B2	2805	B4	2812	B6	2814	B7	2818	C1	3803	C3	3805	A5	3807	B5	3812	B6	3814	B7	3816	B8	5803	B1	7804	B5
1801	B1	1804	D9	2802	A4	2804	B4	2806	B5	2813	B6	2815	B8	3802	B8	3804	B3	3806	B4	3808	C5	3813	B7	3815	C7	3817	D8	7803	B5	7806	B7


1
2
3
4
5
6
7
8
9
A
B
C
D
1801
TC38
5803
2u2
4n7
2803
Mic
a
10K
3803
Mic
3804
4K7
2804
220n
+12A
2802
47u
Mic
a
2K7
3805
3806
1M
2K7
3807
7803
BC847B
BC857B
7804
2805
1n
22R
3808
a
2806
470n
20K
3812
a
2812
470n
0.7V
2813 1n
+12A
2K2
3813
3814
1M
8.4V
10u
2814
7806
BC847B
820R
3815
a
100K
3816
a
2815
47u
3802
560R
+12A
82
DIPMATE
Gnd_a
K_OUT
+12V
TO DAC
# 1805
RT-01T
# 2818
100n
Mic
1803
SKQNAB
DVD OPEN/CLOSE
B
3817
820R
1804
EH-B
FROM
FRONT
3139 118 53360...87520 for...3431 pt1 dd wk0023

Note : Some values may varies, see respective parts list for correct value.
: Provision

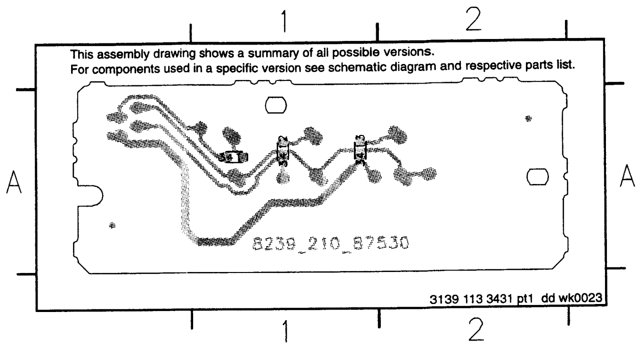
DISC TYPE LED BOARD - COMPONENT LAYOUT

1411	A2	6411	A2	6412	A2	6413	A1


1
2
A
This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram and respective parts list.
1411
8239_210_87530
FW-D1/panels/3139_113_34311_01
3139 113 3431 pt1 dd wk0023

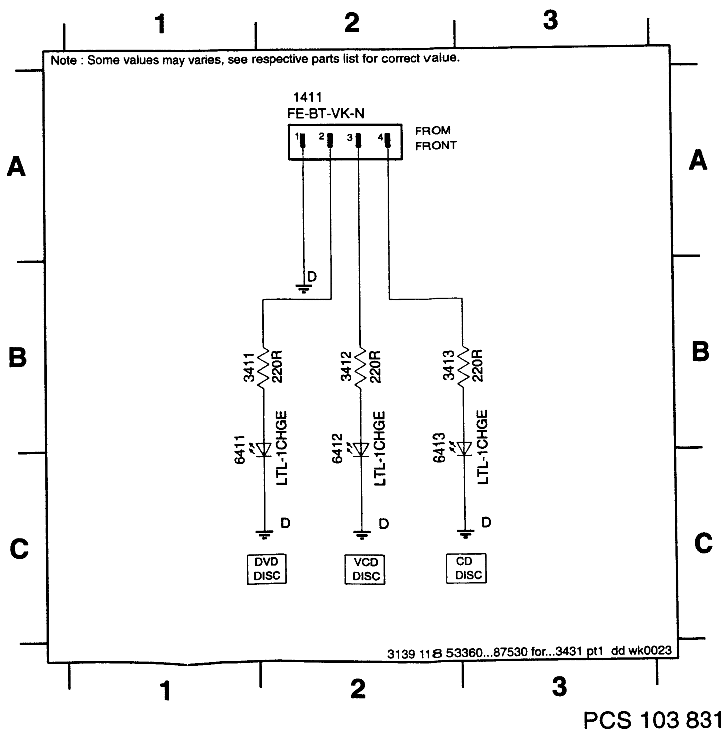
DISC TYPE LED BOARD - CHIP LAYOUT

3411	A1	3412	A1	3413	A1


1
2
A
This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram and respective parts list.
8239_210_87530
3139 113 3431 pt1 dd wk0023

DISC TYPE LED PART - CIRCUIT DIAGRAM

1411	A2	3411	B1	3412	B2	3413	B2	6411	B1	6412	B2	6413	B2


1
2
3
A
B
C
1411
FE-BT-VK-N
FROM
FRONT
D
3411
220R
3412
220R
3413
220R
6411
LTL-1CHGE
6412
LTL-1CHGE
6413
LTL-1CHGE
D
DVD
DISC
VCD
DISC
CD
DISC
3139 118 53360...87530 for...3431 pt1 dd wk0023

Note : Some values may varies, see respective parts list for correct value.

MISCELLANEOUS

1401	4822 276 13775	Tact Switch
1402	4822 276 13775	Tact Switch
1403	4822 276 13775	Tact Switch
1404	4822 276 13775	Tact Switch
1405	4822 276 13775	Tact Switch
1406	4822 265 11207	Flex Connector 6P
1411	4822 267 10733	Flex Connector 4P
1421	4822 276 13775	Tact Switch
1422	4822 276 13775	Tact Switch
1423	4822 276 13775	Tact Switch
1424	4822 276 13775	Tact Switch
1425	4822 276 13775	Tact Switch
1426	4822 276 13775	Tact Switch
1427	4822 276 13775	Tact Switch
1428	4822 276 13775	Tact Switch
1429	4822 276 13775	Tact Switch
1430	4822 276 13775	Tact Switch
1431	4822 276 13775	Tact Switch
1432	4822 276 13775	Tact Switch
1435	4822 267 10958	Flex Connector 5P
1436	2422 129 16348	Rotary Encoder 24P
1441	4822 276 13775	Tact Switch
1442	4822 276 13775	Tact Switch
1443	4822 276 13775	Tact Switch
1444	4822 276 13775	Tact Switch
1445	4822 276 13775	Tact Switch
1446	4822 276 13775	Tact Switch
1447	4822 276 13775	Tact Switch
1448	4822 276 13775	Tact Switch
1449	4822 276 13775	Tact Switch
1450	4822 276 13775	Tact Switch
1451	4822 276 13775	Tact Switch
1457	3139 110 52380	FTD Display
1458	2422 129 16385	Rotary Encoder 12P
1459	2422 129 16385	Rotary Encoder 12P
1461	4822 276 13775	Tact Switch
1462	4822 276 13775	Tact Switch
1464	4822 276 13775	Tact Switch
1465	4822 276 13775	Tact Switch
1466	4822 276 13775	Tact Switch
1467	4822 276 13775	Tact Switch
1470	4822 265 11535	Flex Connector 8P
1471	4822 265 11545	Flex Connector 19P
1472	4822 265 11183	Flex Connector 4P
1473	4822 267 10958	Flex Connector 5P
1474	4822 267 51453	Flex Connector 12P
1475	4822 265 11183	Flex Connector 4P
1476	4822 265 11535	Flex Connector 8P
1478	4822 265 11207	Flex Connector 6P
1702	4822 267 10731	Flex Connector 6P
1703	4822 265 11529	Headphone Socket
1801	2422 026 05059	Microphone Socket
1803	4822 276 13775	Tact Switch
1901	4822 267 10733	Flex Connector 4P
1903	2422 025 16525	Flex Connector 16P
1904	2422 025 16526	Flex Connector 22P
1905	2422 025 14518	Flex Connector 9P
1908	2422 025 14518	Flex Connector 9P
1931	4822 265 11515	Flex Connector 8P

CAPACITORS

2401	5322 122 32531	100pF 5% 50V
2421	5322 122 32531	100pF 5% 50V
2425	4822 122 33177	10nF 20% 50V
2426	4822 122 33177	10nF 20% 50V
2441	4822 124 80483	47µF 20% 6,3V
2442	4822 126 14585	100nF 10% 50V
2443	4822 126 14585	100nF 10% 50V
2444	4822 124 80483	47µF 20% 6,3V
2445	4822 124 80483	47µF 20% 6,3V
2446	4822 124 80195	470µF 20% 10V
2447	5322 122 32658	22pF 5% 50V
2448	4822 126 13486	15pF 2% 63V
2449	5322 122 32658	22pF 5% 50V
2450	5322 122 32658	22pF 5% 50V
2451	5322 122 32658	22pF 5% 50V
2455	4822 122 33177	10nF 20% 50V
2456	4822 126 14585	100nF 10% 50V
2457	4822 122 33177	10nF 20% 50V
2458	4822 126 14585	100nF 10% 50V
2461	4822 126 13751	47nF 10% 63V
2462	4822 122 33127	2,2nF 10% 63V
2463	4822 122 33177	10nF 20% 50V
2464	4822 122 33177	10nF 20% 50V
2466	4822 126 13692	47pF 1% 63V
2467	4822 126 13692	47pF 1% 63V
2468	4822 126 13692	47pF 1% 63V
2469	4822 126 13692	47pF 1% 63V
2470	5322 122 32531	100pF 5% 50V
2471	4822 126 13695	82pF 1% 63V
2472	4822 126 13692	47pF 1% 63V
2473	4822 122 33173	560pF 10% 50V
2474	4822 126 13692	47pF 1% 63V
2475	4822 122 33173	560pF 10% 50V
2476	4822 124 22652	2,2µF 20% 50V
2477	4822 126 14585	100nF 10% 50V
2480	4822 126 14585	100nF 10% 50V
2482	5322 122 32531	100pF 5% 50V
2483	5322 122 32531	100pF 5% 50V
2488	4822 122 33177	10nF 20% 50V
2489	4822 122 33177	10nF 20% 50V
2490	4822 126 14585	100nF 10% 50V
2491	4822 126 14585	100nF 10% 50V
2501	4822 126 14043	1µF +80/-20% 16V
2502	4822 126 14585	100nF 10% 50V
2503	4822 126 13751	47nF 10% 63V
2504	5322 122 31866	6,8nF 10% 63V
2505	4822 122 33806	820pF 10% 63V
2506	4822 126 14076	220nF +80/-20% 25V
2507	4822 126 14076	220nF +80/-20% 25V
2508	4822 126 14076	220nF +80/-20% 25V
2511	4822 124 12032	4,7µF 20% 50V
2512	4822 126 14043	1µF +80/-20% 16V
2513	4822 124 12032	4,7µF 20% 50V
2514	5322 122 32531	100pF 5% 50V
2516	5322 122 32531	100pF 5% 50V
2518	5322 122 32531	100pF 5% 50V
2520	5322 122 32531	100pF 5% 50V
2522	5322 122 32531	100pF 5% 50V
2524	5322 122 32531	100pF 5% 50V
2531	5322 122 32448	10pF 5% 63V
2532	5322 122 32448	10pF 5% 63V
2533	4822 126 13838	100nF +80/-20% 50V
2534	4822 124 40433	47µF 20% 25V
2591	5322 122 32531	100pF 5% 50V
2702	5322 122 32654	22nF 10% 63V
2703	4822 126 14585	100nF 10% 50V
2704	4822 126 14585	100nF 10% 50V
2705	5322 122 32654	22nF 10% 63V
2802	4822 124 40433	47µF 20% 25V
2803	5322 126 10223	4,7nF 10% 63V
2804	4822 126 14076	220nF +80/-20% 25V
2805	5322 122 31647	1nF 10% 63V
2806	4822 126 13482	470nF +80/-20% 16V
2812	4822 126 13482	470nF +80/-20% 16V
2813	5322 122 31647	1nF 10% 63V
2814	4822 124 21732	10µF 20% 25V
2815	4822 124 80231	47µF 20% 16V
2921	5322 122 32654	22nF 10% 63V
2922	4822 126 14585	100nF 10% 50V
2923	4822 124 11912	220µF 20% 6,3V
2924	5322 122 32654	22nF 10% 63V
2925	4822 126 14585	100nF 10% 50V
2926	5322 122 32654	22nF 10% 63V
2927	4822 124 41584	100µF 20% 10V
2931	4822 124 40207	100µF 20% 25V
2932	4822 126 13482	470nF +80/-20% 16V
2933	4822 122 33891	3,3nF 10% 63V
2934	5322 126 10223	4,7nF 10% 63V
2935	4822 126 13695	82pF 1% 63V
2936	5322 122 32654	22nF 10% 63V
2937	5322 122 32654	22nF 10% 63V
2938	5322 122 32654	22nF 10% 63V
2939	4822 124 40769	4,7µF 20% 100V
2940	4822 124 40769	4,7µF 20% 100V
2941	5322 122 32531	100pF 5% 50V
2946	4822 124 40207	100µF 20% 25V

RESISTORS

3401	4822 117 10833	10k 1% 0,1W
3402	4822 051 20472	4k7 5% 0,1W
3403	4822 117 12955	2k7 1% 0,1W
3404	4822 051 20182	1k8 5% 0,1W
3405	4822 051 20122	1k2 5% 0,1W
3406	4822 117 11448	180R 1% 0,1W
3407	4822 117 11448	180R 1% 0,1W
3408	4822 117 11448	180R 1% 0,1W
3411	4822 117 11503	220R 1% 0,1W
3412	4822 117 11503	220R 1% 0,1W
3413	4822 117 11503	220R 1% 0,1W
3421	4822 117 11503	220R 1% 0,1W
3422	4822 117 11503	220R 1% 0,1W
3423	4822 117 11504	270R 1% 0,1W
3424	4822 051 20391	390R 5% 0,1W
3425	4822 051 20561	560R 5% 0,1W
3426	4822 117 11454	820R 1% 0,1W
3427	4822 051 20122	1k2 5% 0,1W
3428	4822 051 20182	1k8 5% 0,1W
3429	4822 117 12955	2k7 1% 0,1W
3430	4822 051 20472	4k7 5% 0,1W
3431	4822 117 10833	10k 1% 0,1W
3441	4822 051 10102	1k 2% 0,25W
3442	4822 051 10102	1k 2% 0,25W
3443	4822 051 10102	1k 2% 0,25W
3444	4822 051 10102	1k 2% 0,25W
3445	4822 051 10102	1k 2% 0,25W
3446	4822 051 10102	1k 2% 0,25W
3447	4822 051 10102	1k 2% 0,25W
3448	4822 051 10102	1k 2% 0,25W
3449	4822 051 10102	1k 2% 0,25W
3450	4822 051 10102	1k 2% 0,25W
3451	4822 051 10102	1k 2% 0,25W
3452	4822 051 10102	1k 2% 0,25W
3453	4822 051 10102	1k 2% 0,25W
3454	4822 051 10102	1k 2% 0,25W
3455	4822 051 10102	1k 2% 0,25W
3456	4822 051 10102	1k 2% 0,25W
3457	4822 051 10102	1k 2% 0,25W
3458	4822 051 10102	1k 2% 0,25W
3459	4822 051 10102	1k 2% 0,25W
3460	4822 051 10102	1k 2% 0,25W
3461	4822 051 10102	1k 2% 0,25W
3462	4822 051 10102	1k 2% 0,25W
3463	4822 051 10102	1k 2% 0,25W

ELECTRICAL PARTS LIST - FRONT BOARD

RESISTORS

3464	4822 051 10102	1k 2% 0,25W
3465	4822 051 20471	470R 5% 0,1W
3466	4822 051 10102	1k 2% 0,25W
3467	4822 051 10102	1k 2% 0,25W
3468	4822 051 10102	1k 2% 0,25W
3470	4822 051 20101	100R 5% 0,1W
3471	4822 051 20101	100R 5% 0,1W
3472	4822 051 20101	100R 5% 0,1W
3473	4822 051 20101	100R 5% 0,1W
3474	4822 051 20101	100R 5% 0,1W
3475	4822 051 20101	100R 5% 0,1W
3476	4822 051 20101	100R 5% 0,1W
3477	4822 051 20101	100R 5% 0,1W
3478	4822 051 20101	100R 5% 0,1W
3479	4822 051 20101	100R 5% 0,1W
3480	4822 051 20101	100R 5% 0,1W
3481	4822 051 20101	100R 5% 0,1W
3482	4822 051 20101	100R 5% 0,1W
3483	4822 051 20101	100R 5% 0,1W
3484	4822 051 20101	100R 5% 0,1W
3485	4822 051 20101	100R 5% 0,1W
3486	4822 051 20101	100R 5% 0,1W
3487	4822 051 10102	1k 2% 0,25W
3490	4822 051 10102	1k 2% 0,25W
3491	4822 051 10102	1k 2% 0,25W
3492	4822 051 10102	1k 2% 0,25W
3493	4822 051 10102	1k 2% 0,25W
3494	4822 051 10102	1k 2% 0,25W
3495	4822 051 10102	1k 2% 0,25W
3496	4822 051 10102	1k 2% 0,25W
3497	4822 051 10102	1k 2% 0,25W
3498	4822 051 10102	1k 2% 0,25W
3499	4822 051 10102	1k 2% 0,25W
3500	4822 051 10102	1k 2% 0,25W
3501	4822 051 10102	1k 2% 0,25W
3502	4822 051 10102	1k 2% 0,25W
3503	4822 051 10102	1k 2% 0,25W
3504	4822 051 10102	1k 2% 0,25W
3505	4822 051 10102	1k 2% 0,25W
3506	4822 051 10102	1k 2% 0,25W
3509	4822 117 11503	220R 1% 0,1W
3510	4822 117 11503	220R 1% 0,1W
3511	4822 117 11503	220R 1% 0,1W
3512	4822 117 11503	220R 1% 0,1W
3513	4822 051 10102	1k 2% 0,25W
3513	4822 117 11503	220R 1% 0,1W /21/21M
3514	4822 051 10102	1k 2% 0,25W
3514	4822 117 11503	220R 1% 0,1W /21/21M
3515	4822 051 10102	1k 2% 0,25W
3516	4822 051 10102	1k 2% 0,25W
3517	4822 051 20392	3k9 5% 0,1W

3518	4822 051 20392	3k9 5% 0,1W
3519	4822 051 20471	470R 5% 0,1W
3520	4822 051 20471	470R 5% 0,1W
3521	4822 051 10102	1k 2% 0,25W
3522	4822 051 20101	100R 5% 0,1W
3523	4822 051 10102	1k 2% 0,25W
3524	4822 051 10102	1k 2% 0,25W
3525	4822 051 10102	1k 2% 0,25W
3526	4822 051 20101	100R 5% 0,1W
3527	4822 051 20101	100R 5% 0,1W
3528	4822 051 10102	1k 2% 0,25W
3529	4822 051 10102	1k 2% 0,25W
3531	4822 051 20472	4k7 5% 0,1W
3532	4822 117 10833	10k 1% 0,1W
3533	4822 051 10102	1k 2% 0,25W
3534	4822 117 10837	100k 1% 0,1W
3535	4822 051 20472	4k7 5% 0,1W
3536	4822 051 10102	1k 2% 0,25W
3537	4822 051 10102	1k 2% 0,25W
3538	4822 117 10833	10k 1% 0,1W
3539	4822 117 10833	10k 1% 0,1W
3541	4822 051 20479	47R 5% 0,1W
3542	4822 117 10833	10k 1% 0,1W
3543	4822 051 10102	1k 2% 0,25W
3544	4822 117 10837	100k 1% 0,1W
3545	4822 117 10833	10k 1% 0,1W
3546	4822 117 12955	2k7 1% 0,1W /21/21M
3546	4822 051 20472	4k7 5% 0,1W /22
3546	4822 051 20822	8k2 5% 0,1W /30/37
3547	4822 117 10833	10k 1% 0,1W
3548	4822 117 10833	10k 1% 0,1W
3551	4822 051 10102	1k 2% 0,25W
3552	4822 051 10102	1k 2% 0,25W
3553	4822 051 20471	470R 5% 0,1W
3554	4822 051 20101	100R 5% 0,1W
3555	4822 117 10833	10k 1% 0,1W
3557	4822 117 10833	10k 1% 0,1W
3558	4822 117 10833	10k 1% 0,1W
3559	4822 117 10833	10k 1% 0,1W
3561	4822 051 10102	1k 2% 0,25W
3562	4822 117 13579	220k 1% 0,1W
3563	4822 117 11449	2k2 5% 0,1W
3564	4822 117 10833	10k 1% 0,1W
3565	4822 117 10833	10k 1% 0,1W
3566	4822 117 10833	10k 1% 0,1W
3567	4822 117 10833	10k 1% 0,1W
3568	4822 051 20472	4k7 5% 0,1W
3569	4822 117 13577	330R 1% 1,25W
3570	4822 051 20471	470R 5% 0,1W
3573	4822 051 20471	470R 5% 0,1W
3574	4822 051 20471	470R 5% 0,1W

ECTRICAL PARTS LIST - FRONT BOARD

5	4822 051 20471	470R 5% 0,1W
6	4822 051 20471	470R 5% 0,1W
7	4822 117 10837	100k 1% 0,1W
8	4822 051 10102	1k 2% 0,25W
9	4822 117 10833	10k 1% 0,1W
2	4822 117 12955	2k7 1% 0,1W
3	4822 117 12955	2k7 1% 0,1W
4	4822 117 12955	2k7 1% 0,1W
5	4822 117 11503	220R 1% 0,1W
6	4822 117 11503	220R 1% 0,1W
7	4822 117 11504	270R 1% 0,1W
8	4822 051 20391	390R 5% 0,1W
9	4822 051 20561	560R 5% 0,1W
0	4822 117 11454	820R 1% 0,1W
	4822 117 11503	220R 1% 0,1W
2	4822 117 11503	220R 1% 0,1W
3	4822 117 11504	270R 1% 0,1W
	4822 051 20391	390R 5% 0,1W
	4822 051 20561	560R 5% 0,1W
	4822 117 11454	820R 1% 0,1W
	4822 051 20122	1k2 5% 0,1W
	4822 051 20182	1k8 5% 0,1W
	4822 117 12955	2k7 1% 0,1W
	4822 051 20472	4k7 5% 0,1W
	4822 117 10833	10k 1% 0,1W
	4822 051 20471	470R 5% 0,1W
	4822 117 11504	270R 1% 0,1W
	4822 117 11504	270R 1% 0,1W
	4822 117 11504	270R 1% 0,1W
	4822 117 11504	270R 1% 0,1W
	4822 117 11504	270R 1% 0,1W
	4822 051 20471	470R 5% 0,1W
	4822 117 11448	180R 1% 0,1W
	4822 116 52213	180R 5% 0,5W
	4822 117 11448	180R 1% 0,1W
	4822 117 11448	180R 1% 0,1W
	4822 117 11448	180R 1% 0,1W
	4822 117 11139	1k5 1% 0,1W
	4822 117 11139	1k5 1% 0,1W
	4822 117 11139	1k5 1% 0,1W
	4822 051 20684	680k 5% 0,1W
	4822 051 20684	680k 5% 0,1W
	4822 051 20684	680k 5% 0,1W
	4822 117 10834	47k 1% 0,1W
	4822 117 10834	47k 1% 0,1W
	4822 117 10834	47k 1% 0,1W
	4822 051 20474	470k 5% 0,1W
	4822 051 20474	470k 5% 0,1W
	4822 051 20474	470k 5% 0,1W
	4822 117 10833	10k 1% 0,1W
	4822 117 10833	10k 1% 0,1W

3640	4822 117 11503	220R 1% 0,1W
3641	4822 117 11503	220R 1% 0,1W
3642	4822 051 20105	1M 5% 0,1W
3643	4822 051 20684	680k 5% 0,1W
3644	4822 051 20105	1M 5% 0,1W
3645	4822 051 10102	1k 2% 0,25W
3646	4822 051 20471	470R 5% 0,1W
3647	4822 051 20471	470R 5% 0,1W
3648	4822 051 10102	1k 2% 0,25W
3649	4822 051 10102	1k 2% 0,25W
3650	4822 051 20479	47R 5% 0,1W
3655	4822 117 10833	10k 1% 0,1W
3656	4822 117 10833	10k 1% 0,1W
3663	4822 117 11149	82k 1% 0,1W
3664	4822 117 11149	82k 1% 0,1W
3665	4822 117 11149	82k 1% 0,1W
3666	4822 117 11149	82k 1% 0,1W
3667	4822 117 11149	82k 1% 0,1W
3668	4822 117 11149	82k 1% 0,1W
3669	4822 051 20472	4k7 5% 0,1W
3670	4822 117 11448	180R 1% 0,1W
3671	4822 117 11448	180R 1% 0,1W
3672	4822 117 11448	180R 1% 0,1W
3675	4822 117 11149	82k 1% 0,1W
3676	4822 117 11149	82k 1% 0,1W
3677	4822 117 11149	82k 1% 0,1W
3691	4822 051 20471	470R 5% 0,1W
3692	4822 117 10833	10k 1% 0,1W
3693	4822 117 10833	10k 1% 0,1W
3694	4822 117 10833	10k 1% 0,1W
3695	4822 117 10833	10k 1% 0,1W
3696	4822 051 20101	100R 5% 0,1W
3697	4822 051 20101	100R 5% 0,1W
3698	4822 051 20822	8k2 5% 0,1W
3699	4822 117 11449	2k2 5% 0,1W
3700	4822 051 20822	8k2 5% 0,1W
3701	4822 117 11449	2k2 5% 0,1W
3702	4822 051 10102	1k 2% 0,25W
3703	4822 117 10833	10k 1% 0,1W
3704	4822 117 10833	10k 1% 0,1W
3802	4822 051 20561	560R 5% 0,1W
3803	4822 117 10833	10k 1% 0,1W
3804	4822 051 20472	4k7 5% 0,1W
3805	4822 117 12955	2k7 1% 0,1W
3806	4822 051 20105	1M 5% 0,1W
3807	4822 117 12955	2k7 1% 0,1W
3808	4822 051 20229	22R 5% 0,1W
3812	2120 366 90292	POTM CAR LOG 20k
3813	4822 117 12955	2k7 1% 0,1W
3814	4822 051 20105	1M 5% 0,1W
3815	4822 117 11454	820R 1% 0,1W

ELECTRICAL PARTS LIST - FRONT BOARD

RESISTORS

3816	4822 117 10837	100k 1% 0,1W
3817	4822 117 11454	820R 1% 0,1W
3915	4822 117 10833	10k 1% 0,1W
3916	4822 051 20479	47R 5% 0,1W
3917	4822 051 20479	47R 5% 0,1W
3918	4822 051 20479	47R 5% 0,1W
3919	4822 117 10833	10k 1% 0,1W
3921	4822 051 20479	47R 5% 0,1W
3924	4822 117 11449	2k2 5% 0,1W
3925	4822 051 20562	5k6 5% 0,1W
3931	4822 051 20471	470R 5% 0,1W
3932	4822 117 10833	10k 1% 0,1W
3933	4822 117 10833	10k 1% 0,1W
3934	4822 117 10833	10k 1% 0,1W
3935	4822 051 20223	22k 5% 0,1W
3936	4822 051 20479	47R 5% 0,1W
3937	4822 051 20479	47R 5% 0,1W
3938	4822 051 20479	47R 5% 0,1W
3947	4822 051 20471	470R 5% 0,1W
3948	4822 051 20829	82R 5% 0,1W
3949	4822 051 20829	82R 5% 0,1W
3950	4822 051 20829	82R 5% 0,1W
4401	4822 051 20008	0R Jumper 0805
4422	4822 051 20008	0R Jumper 0805
4441	4822 051 20008	0R Jumper 0805
4442	4822 051 20008	0R Jumper 0805
4443	4822 051 20008	0R Jumper 0805
4444	4822 051 20008	0R Jumper 0805
4445	4822 051 20008	0R Jumper 0805
4446	4822 051 20008	0R Jumper 0805
4447	4822 051 20008	0R Jumper 0805
4448	4822 051 20008	0R Jumper 0805
4449	4822 051 20008	0R Jumper 0805
4450	4822 051 20008	0R Jumper 0805
4451	4822 051 20008	0R Jumper 0805
4452	4822 051 20008	0R Jumper 0805
4453	4822 051 20008	0R Jumper 0805
4454	4822 051 20008	0R Jumper 0805
4455	4822 051 20008	0R Jumper 0805
4456	4822 051 20008	0R Jumper 0805
4457	4822 051 20008	0R Jumper 0805
4458	4822 051 20008	0R Jumper 0805
4459	4822 051 20008	0R Jumper 0805
4460	4822 051 20008	0R Jumper 0805
4461	4822 051 20008	0R Jumper 0805
4462	4822 051 20008	0R Jumper 0805
4463	4822 051 20008	0R Jumper 0805
4464	4822 051 20008	0R Jumper 0805
4465	4822 051 20008	0R Jumper 0805
4466	4822 051 20008	0R Jumper 0805
4467	4822 051 20008	0R Jumper 0805
4468	4822 051 20008	0R Jumper 0805
4469	4822 051 20008	0R Jumper 0805
4470	4822 051 20008	0R Jumper 0805
4471	4822 051 20008	0R Jumper 0805
4472	4822 051 20008	0R Jumper 0805
4473	4822 051 20008	0R Jumper 0805
4474	4822 051 20008	0R Jumper 0805
4475	4822 051 20008	0R Jumper 0805
4476	4822 051 20008	0R Jumper 0805
4477	4822 051 20008	0R Jumper 0805
4478	4822 051 20008	0R Jumper 0805
4479	4822 051 20008	0R Jumper 0805
4480	4822 051 20008	0R Jumper 0805
4481	4822 051 20008	0R Jumper 0805
4482	4822 051 20008	0R Jumper 0805
4483	4822 051 20008	0R Jumper 0805
4484	4822 051 20008	0R Jumper 0805
4485	4822 051 20008	0R Jumper 0805
4486	4822 051 20008	0R Jumper 0805
4490	4822 051 20008	0R Jumper 0805
4491	4822 051 20008	0R Jumper 0805
4492	4822 051 20008	0R Jumper 0805
4494	4822 051 20008	0R Jumper 0805
4607	4822 051 20008	0R Jumper 0805
4691	4822 051 20008	0R Jumper 0805
4692	4822 051 20008	0R Jumper 0805
4693	4822 051 20008	0R Jumper 0805
4694	4822 051 20008	0R Jumper 0805
4695	4822 051 20008	0R Jumper 0805
4701	4822 051 20008	0R Jumper 0805
4702	4822 051 20008	0R Jumper 0805
4703	4822 051 20008	0R Jumper 0805
4705	4822 051 20008	0R Jumper 0805
4801	4822 051 20008	0R Jumper 0805
4905	4822 051 20008	0R Jumper 0805
4906	4822 051 20008	0R Jumper 0805
4910	4822 051 20008	0R Jumper 0805
4911	4822 051 20008	0R Jumper 0805
4912	4822 051 20008	0R Jumper 0805
4931	4822 051 20008	0R Jumper 0805
4932	4822 051 20008	0R Jumper 0805
4933	4822 051 20008	0R Jumper 0805
4934	4822 051 20008	0R Jumper 0805
4935	4822 051 20008	0R Jumper 0805
4940	4822 051 20008	0R Jumper 0805
4941	4822 051 20008	0R Jumper 0805
4942	4822 051 20008	0R Jumper 0805
4943	4822 051 20008	0R Jumper 0805
4944	4822 051 20008	0R Jumper 0805
4945	4822 051 20008	0R Jumper 0805
4946	4822 051 20008	0R Jumper 0805

4947	4822 051 20008	0R Jumper 0805
4948	4822 051 20008	0R Jumper 0805
4949	4822 051 20008	0R Jumper 0805
4950	4822 051 20008	0R Jumper 0805
4951	4822 051 20008	0R Jumper 0805
4952	4822 051 20008	0R Jumper 0805
4953	4822 051 20008	0R Jumper 0805
4954	4822 051 20008	0R Jumper 0805
4955	4822 051 20008	0R Jumper 0805
4956	4822 051 20008	0R Jumper 0805
4957	4822 051 20008	0R Jumper 0805

COILS & FILTERS

5441	5322 242 73686	RES CER 12MHz
5442	2422 543 01069	RES XTL 32kHz768
5443	4822 157 62552	Coil 2,2µH 5%
5444	4822 157 62552	Coil 2,2µH 5%
5445	4822 157 62552	Coil 2,2µH 5%
5446	4822 157 62552	Coil 2,2µH 5%
5448	4822 157 62552	Coil 2,2µH 5%
5450	4822 157 62552	Coil 2,2µH 5%
5451	4822 242 72195	QUARZ 4,332MHz
5701	4822 157 62552	Coil 2,2µH 5%
5702	4822 157 10586	Coil 2,2µH 10%
5703	4822 157 62552	Coil 2,2µH 5%
5803	4822 157 62552	Coil 2,2µH 5%
5901	4822 157 10586	Coil 2,2µH 10%
5902	4822 157 10586	Coil 2,2µH 10%

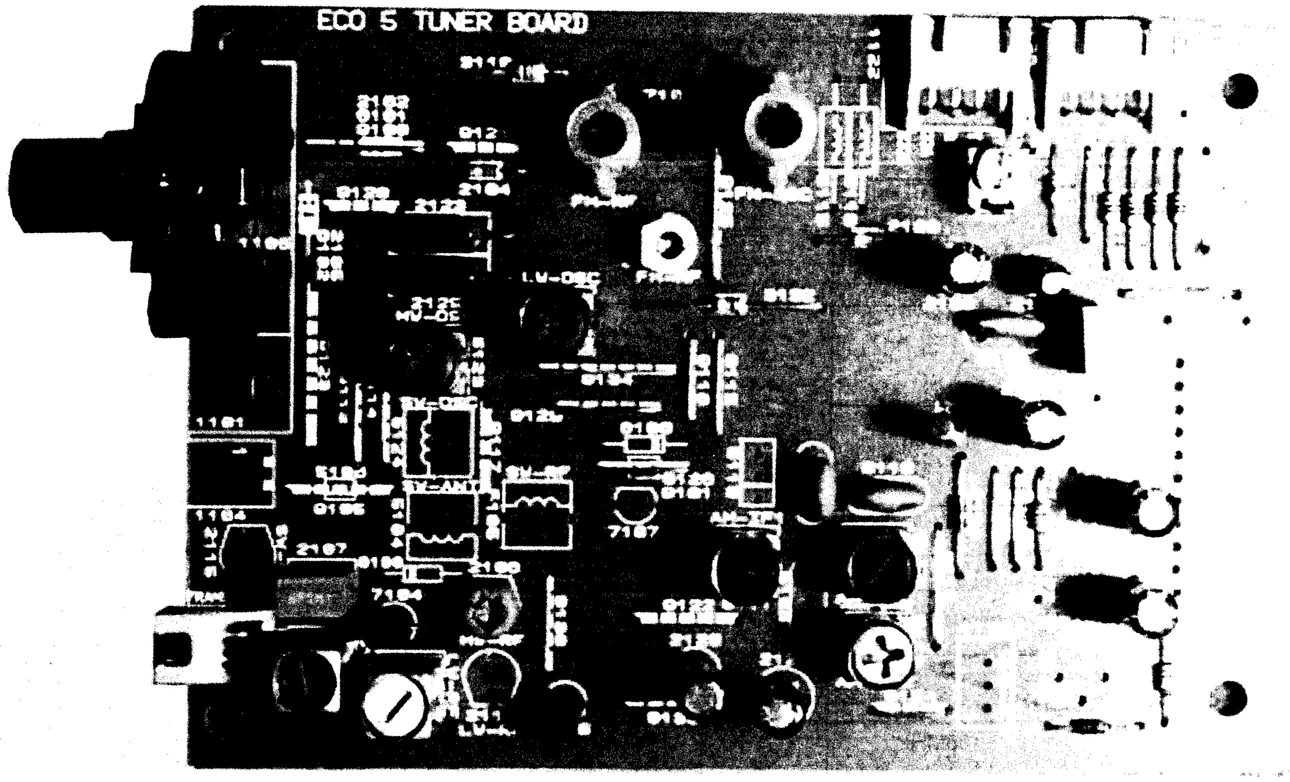
DIODES

6401	4822 130 10791	LTL-1CHGE
6402	4822 130 10791	LTL-1CHGE
6403	4822 130 10791	LTL-1CHGE
6411	4822 130 10791	LTL-1CHGE
6412	4822 130 10791	LTL-1CHGE
6413	4822 130 10791	LTL-1CHGE
6415	9322 153 37676	LB3333RT-E7898
6441	9322 153 38676	LO3336UV-E7898
6442	9322 153 38676	LO3336UV-E7898
6443	9322 153 38676	LO3336UV-E7898
6444	9322 153 38676	LO3336UV-E7898
6445	9322 153 38676	LO3336UV-E7898
6451	4822 130 10791	LTL-1CHGE
6452	4822 130 10791	LTL-1CHGE
6453	4822 130 10791	LTL-1CHGE
6454	4822 130 10791	LTL-1CHGE
6455	4822 130 11589	LTL-1CHAE
6457	4822 130 82978	LTL-1CHPE
6458	9322 153 53676	LED VS LB5416
6459	9322 153 53676	LED VS LB5416
6460	4822 130 10165	GR1U28XP
6461	4822 130 31878	1N4003G
6463	4822 130 30621	1N4148
6471	4822 130 30621	1N4148
6472	4822 130 30621	1N4148
6473	4822 130 30621	1N4148
6474	4822 130 30621	1N4148

TRANSISTORS & INTEGRATED CIRCUITS

7441	3139 110 52370	TMP88CU77 - 'D51S52371'
7442	9322 145 26668	M24C02-WMN6
7443	4822 209 15449	74HC4094D
7444	4822 209 15449	74HC4094D
7445	4822 209 31981	SAA6579T/V1
7448	5322 130 60159	BC847B
7449	5322 130 60159	BC847B
7451	5322 130 60159	BC847B
7452	5322 130 60159	BC847B
7454	5322 130 60159	BC847B
7455	5322 130 60159	BC847B
7456	5322 130 60159	BC847B
7457	5322 130 60159	BC847B
7458	5322 130 60159	BC847B
7459	5322 130 60159	BC847B
7491	5322 209 11306	HEF4094BT
7492	5322 130 60159	BC847B
7493	5322 130 60159	BC847B
7803	5322 130 60159	BC847B
7804	4822 130 60373	BC857B
7806	5322 130 60159	BC847B
7903	4822 209 17423	UDA1328T/N1
7904	4822 130 42804	BC817-25
7931	4822 209 15973	TC9409BF
7932	9337 137 50653	74HCT157D

Note : Only the parts mentioned in this list are normal service spare parts.


ECO 5 TUNER BOARD

TUNER BOARD ECO5

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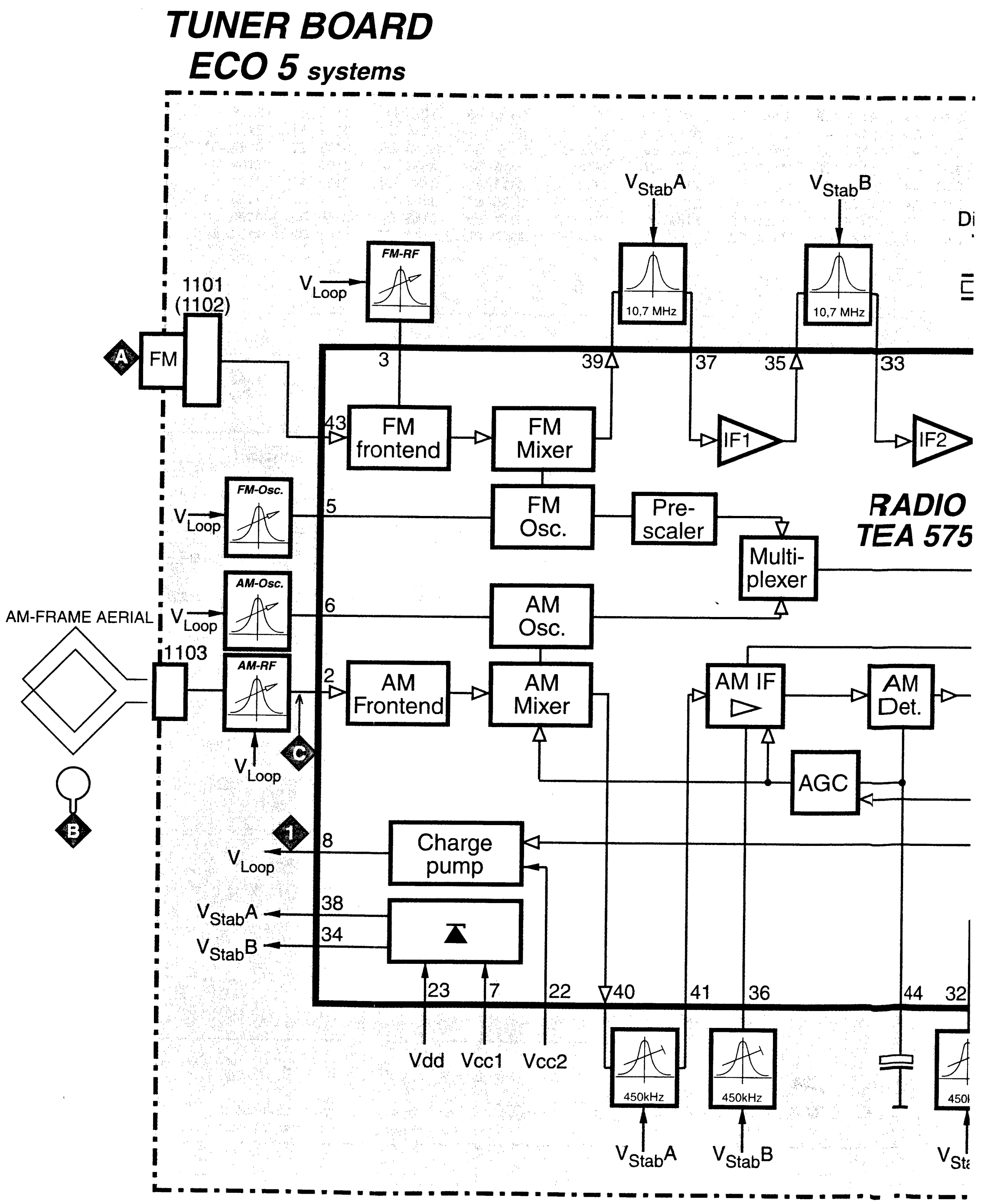
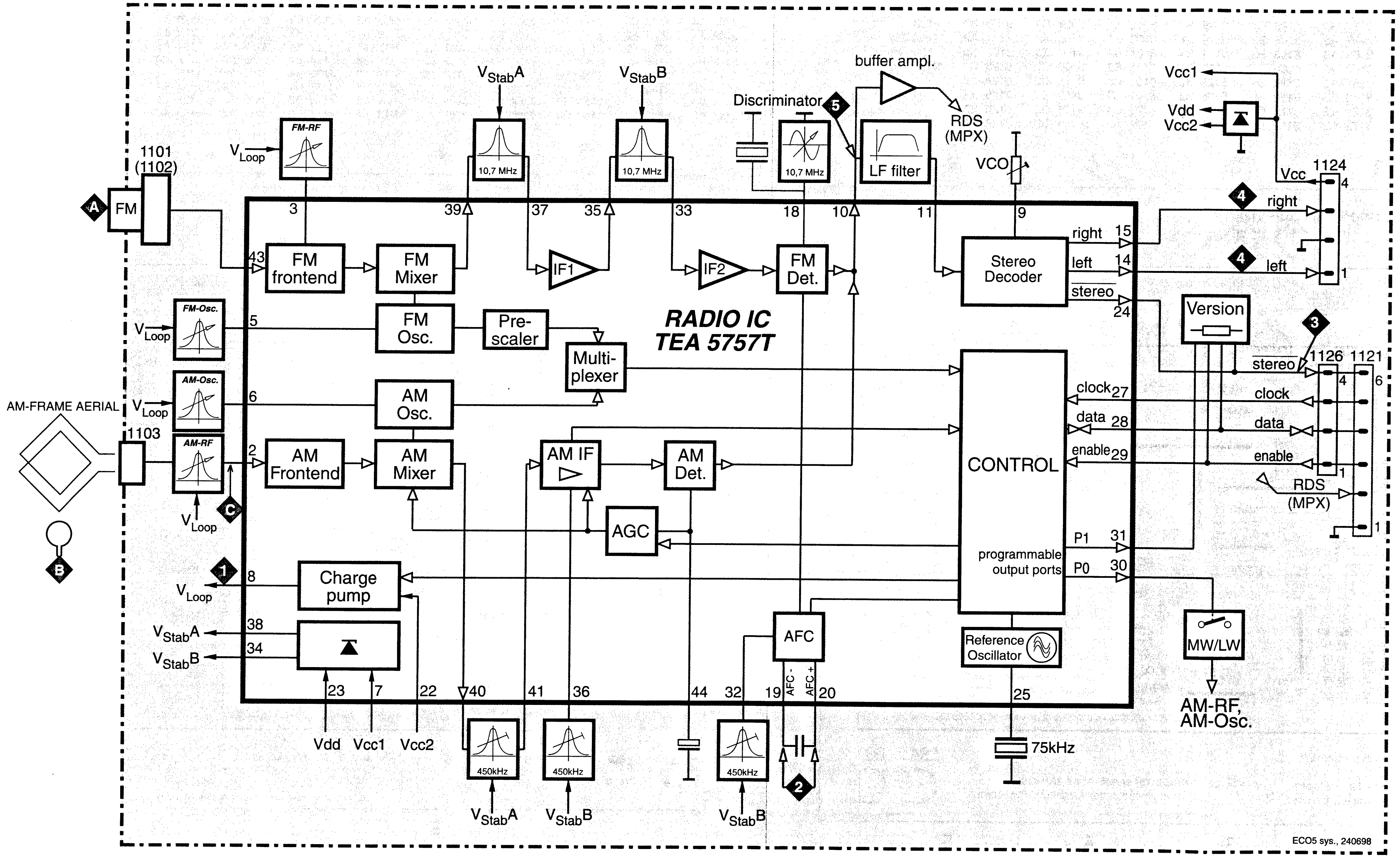
Circuit diagram 7B-3
Partslist 7B-4

BLOCKDIAGRAM


TUNER BOARD
ECO 5 systems
VStabA
VStabB
FM-RF
VLoop
1101
(1102)
FM
A
10,7 MHz
10,7 MHz
3
39
37
35
33
43
FM frontend
FM Mixer
IF1
IF2
FM-Osc.
5
FM Osc.
Pre-scaler
Multi-plexer
RADIO
TEA 575
AM-Osc.
6
AM Osc.
AM-FRAME AERIAL
1103
AM-RF
2
AM Frontend
AM Mixer
AM IF
AM Det.
C
AGC
B
1
8
Charge pump
38
34
23
7
22
40
41
36
44
32
Vdd
Vcc1
Vcc2
450kHz
450kHz

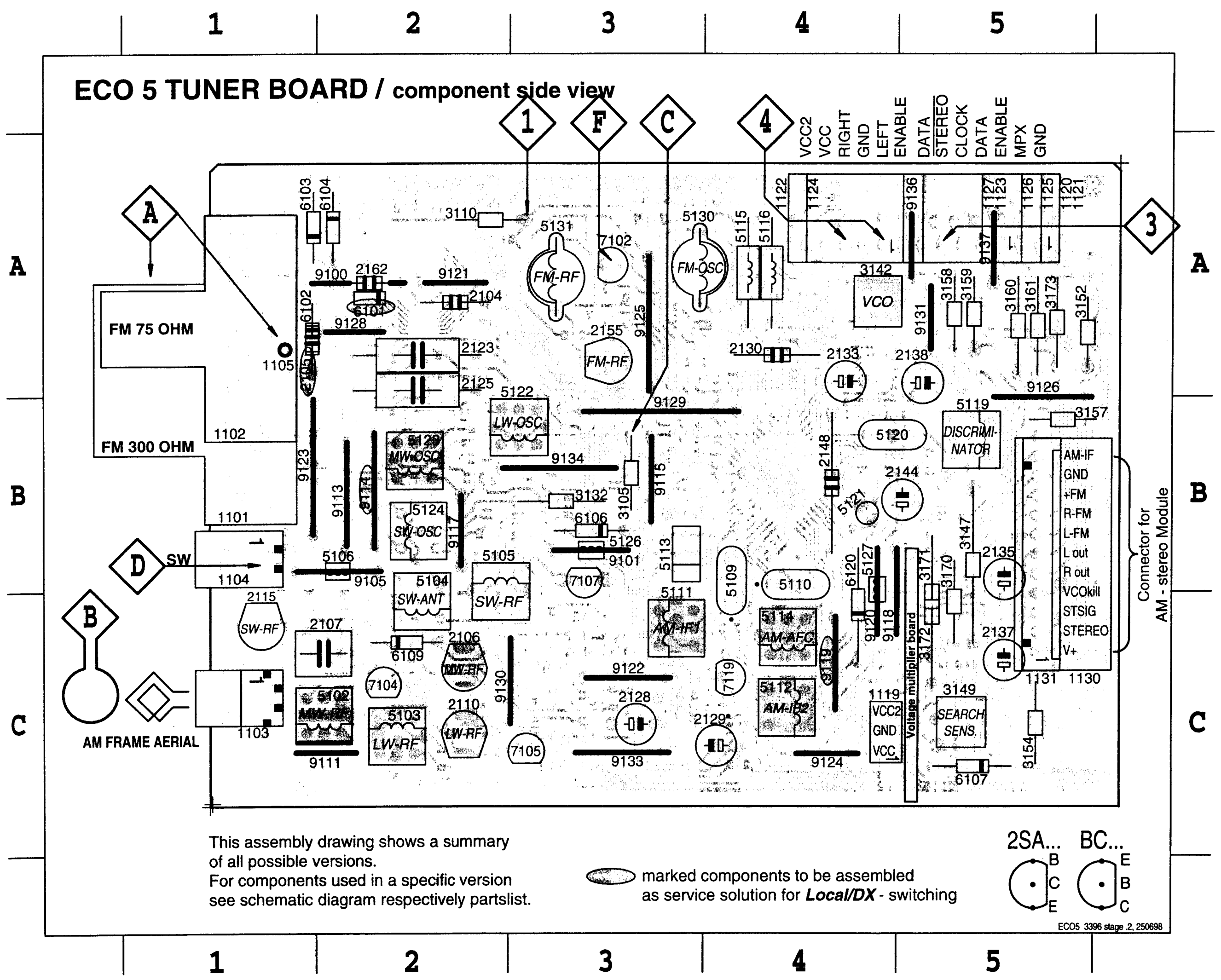
BLOCKDIAGRAM

TUNER BOARD
ECO 5 systems



VStabA
VStabB
buffer ampl.
Discriminator
5
RDS
(MPX)
VCO
Vcc1
Vdd
Vcc2
Vcc
1124
4
right
4
left
1
1101
(1102)
A
FM
VLoop
FM-RF
10,7 MHz
10,7 MHz
10,7 MHz
LF filter
3
39
37
35
33
18
10
11
9
43
FM
frontend
FM
Mixer
IF1
IF2
FM
Det.
Stereo
Decoder
right 15
left 14
stereo
24
FM-Osc.
VLoop
5
FM
Osc.
Pre-
scaler
Multi-
plexer
RADIO IC
TEA 5757T
Version
3
stereo
1126
1121
4
6
AM-Osc.
AM-FRAME AERIAL
VLoop
6
AM
Osc.
clock 27
data 28
enable 29
clock
data
enable
1
RDS
(MPX)
1
1103
AM-RF
2
AM
Frontend
AM
Mixer
AM IF
AM
Det.
CONTROL
C
VLoop
AGC
B
1
8
VLoop
Charge
pump
programmable
output ports
P1 31
P0 30
38
34
VStabA
VStabB
AFC
Reference
Oscillator
MW/LW
AFC -
AFC +
23
7
22
40
41
36
44
32
19
20
25
AM-RF,
AM-Osc.
Vdd
Vcc1
Vcc2
450kHz
450kHz
450kHz
75kHz
2
VStabA
VStabB
VStabB
ECO5 sys., 240698

1101	A1	2106	C2	2137	C5	3149	C5	3173	A5	5114	C4	5130	A3	7104	C2	9117	B2	9129	B3
1102	A1	2107	C2	2138	A5	3152	A5	5102	C2	5115	A4	5131	A3	7105	C3	9118	B4	9130	C3
1103	C1	2110	C2	2144	B5	3154	C5	5103	C2	5116	A4	6101	A2	7107	B3	9119	C4	9131	A5
1104	B1	2115	C1	2148	B4	3157	B5	5104	C2	5119	B5	6102	A1	7119	C4	9120	B4	9133	C3
1105	A1	2123	A2	2155	A3	3158	A5	5105	B2	5120	B4	6103	A1	9100	A2	9121	A2	9134	B3
1119	C5	2125	A2	2162	A2	3159	A5	5106	B2	5121	B4	6104	A2	9101	B3	9122	C3	9136	A5
1120	A5	2128	C3	3105	B3	3160	A5	5109	B4	5122	B3	6106	B3	9105	B2	9123	B1	9137	A5
1130	B5	2129	C4	3110	A2	3161	A5	5110	B4	5123	B2	6107	C5	9111	C2	9124	C4		
1131	B5	2130	A4	3132	B3	3170	C5	5111	C3	5124	B2	6109	C2	9113	B2	9125	A3		
2104	A2	2133	A4	3142	A4	3171	C5	5112	C4	5126	B3	6120	C4	9114	B2	9126	B5		
2105	A1	2135	B5	3147	B5	3172	C5	5113	B3	5127	B4	7102	A3	9115	B3	9128	A2		

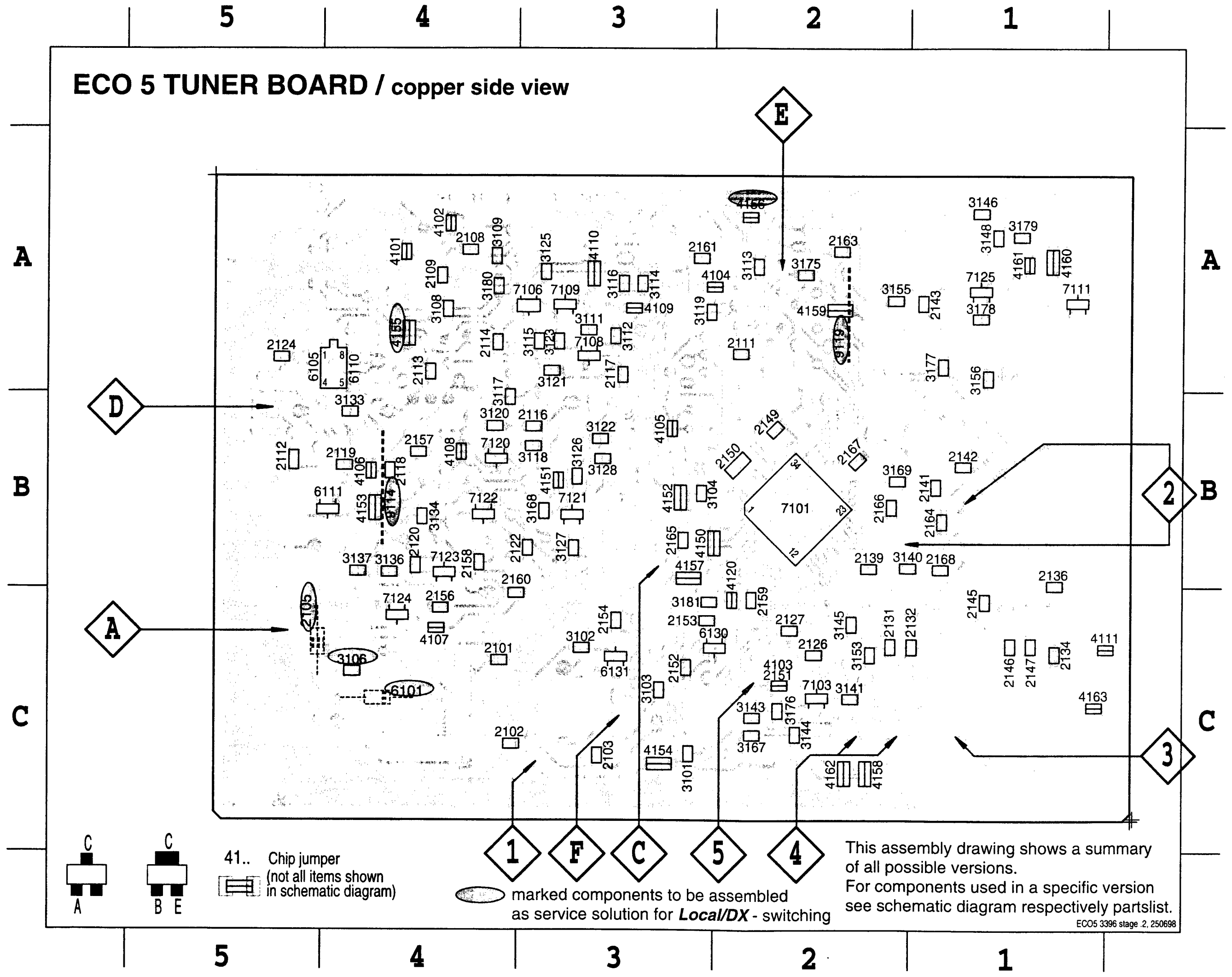

1
2
3
4
5
A
B
C
1
F
C
4
3
A
D
B
VCC2
VCC
RIGHT
GND
LEFT
ENABLE
DATA
STEREO
CLOCK
DATA
ENABLE
MPX
GND
FM 75 OHM
FM 300 OHM
SW
AM FRAME AERIAL
FM-RF
FM-OSC
VCO
LW-OSC
MW-OSC
SW-OSC
SW-ANT
SW-RF
AM-IF1
AM-AFC
AM-IF2
LW-RF
MW-RF
DISCRIMI-NATOR
SEARCH SENS.
Voltage multiplier board
AM-IF
GND
+FM
R-FM
L-FM
L out
R out
VCOkill
STSIG
STEREO
V+
Connector for AM - stereo Module
VCC2
GND
VCC
2SA...
BC...
B
C
E
E
B
C
ECO5 3396 stage 2. 250698

ECO 5 TUNER BOARD / component side view

This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram respectively partslist.

marked components to be assembled as service solution for *Local/DX* - switching

2101	C4	2118	B4	2139	B2	2153	C3	2166	B2	3112	A3	3123	A3	3143	C2	3175	A2	4105	B3	4153	B4	6105	A4	7120	B4
2102	C4	2119	B4	2141	B1	2154	C3	2167	B2	3113	A2	3125	A3	3144	C2	3176	C2	4106	B4	4154	C3	6110	A4	7121	B3
2103	C3	2120	B4	2142	B1	2156	C4	2168	B1	3114	A3	3126	B3	3145	C2	3177	A1	4107	C4	4155	A4	6111	B4	7122	B4
2108	A4	2122	B3	2143	A1	2157	B4	3101	C3	3115	A3	3127	B3	3146	A1	3178	A1	4108	B4	4156	A2	6130	C2	7123	B4
2109	A4	2124	A5	2145	C1	2158	B4	3102	C3	3116	A3	3128	B3	3148	A1	3179	A1	4109	A3	4157	B3	6131	C3	7124	C4
2111	A2	2126	C2	2146	C1	2159	C2	3103	C3	3117	B4	3133	B4	3153	C2	3180	A4	4110	A3	4158	C2	7101	B2	7125	A1
2112	B5	2127	C2	2147	C1	2160	C4	3104	B3	3118	B3	3134	B4	3155	A2	3181	C3	4111	C1	4159	A2	7103	C2		
2113	A4	2131	C2	2149	B2	2161	A3	3106	C4	3119	A3	3136	B4	3156	A1	4101	A4	4120	C2	4160	A1	7106	A3		
2114	A4	2132	C1	2150	B2	2163	A2	3108	A4	3120	B4	3137	B4	3167	C2	4102	A4	4150	B2	4161	A1	7108	A3		
2116	B3	2134	C1	2151	C2	2164	B1	3109	A4	3121	A3	3140	B2	3168	B3	4103	C2	4151	B3	4162	C1	7109	A3		
2117	A3	2136	B1	2152	C3	2165	B3	3111	A3	3122	B3	3141	C2	3169	B2	4104	A2	4152	B3	4163	C1	7111	A1		


5
4
3
2
1
A
B
C
E
D
A
2
3
1
F
C
5
4
7101
C
C
A
B E
41..
ECO5 3396 stage 2. 250698

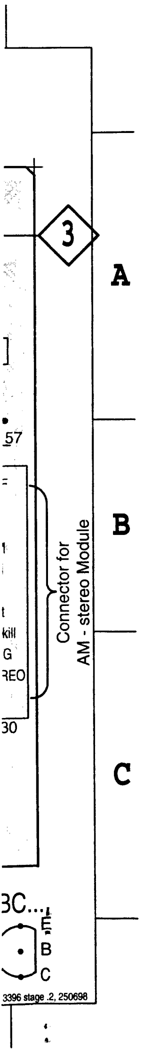
ECO 5 TUNER BOARD / copper side view

Chip jumper (not all items shown in schematic diagram)

marked components to be assembled as service solution for *Local/DX* - switching

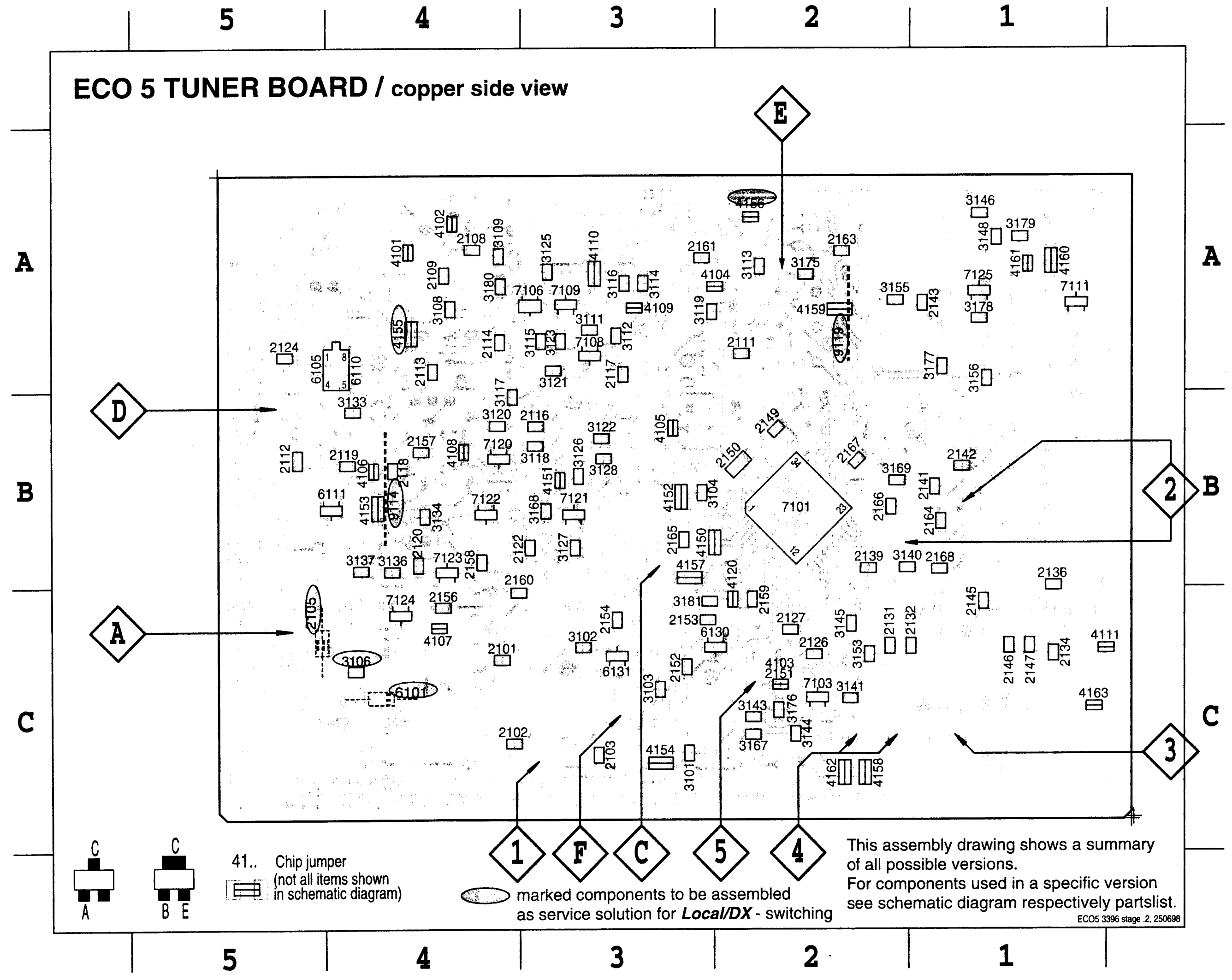
This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram respectively partslist.

TUN
V
VAF
FM
87
(65.81
MW
FM/AN
53
FM/MV
53
LW
15:
MW
FM/MV
53
FM
FM
FM
FM
87
(65.81
VCC
FM
AM
MW
AM
MW
AM
MW
FM/MV
53
LW
MW
FM/AI
53
Use se
[1] If se
(inpu
[3] For
Repe



2101	C4	2118	B4	2139	B2	2153	C3	2166	B2	3112	A3	3123	A3	3143	C2	3175	A2	4105	B3	4153	B4	6105	A4	7120	B4
2102	C4	2119	B4	2141	B1	2154	C3	2167	B2	3113	A2	3125	A3	3144	C2	3176	C2	4106	B4	4154	C3	6110	A4	7121	B3
2103	C3	2120	B4	2142	B1	2156	C4	2168	B1	3114	A3	3126	B3	3145	C2	3177	A1	4107	C4	4155	A4	6111	B4	7122	B4
2108	A4	2122	B3	2143	A1	2157	B4	3101	C3	3115	A3	3127	B3	3146	A1	3178	A1	4108	B4	4156	A2	6130	C2	7123	B4
2109	A4	2124	A5	2145	C1	2158	B4	3102	C3	3116	A3	3128	B3	3148	A1	3179	A1	4109	A3	4157	B3	6131	C3	7124	C4
2111	A2	2126	C2	2146	C1	2159	C2	3103	C3	3117	B4	3133	B4	3153	C2	3180	A4	4110	A3	4158	C2	7101	B2	7125	A1
2112	B5	2127	C2	2147	C1	2160	C4	3104	B3	3118	B3	3134	B4	3155	A2	3181	C3	4111	C1	4159	A2	7103	C2		
2113	A4	2131	C2	2149	B2	2161	A3	3106	C4	3119	A3	3136	B4	3156	A1	4101	A4	4120	C2	4160	A1	7106	A3		
2114	A4	2132	C1	2150	B2	2163	A2	3108	A4	3120	B4	3137	B4	3167	C2	4102	A4	4150	B2	4161	A1	7108	A3		
2116	B3	2134	C1	2151	C2	2164	B1	3109	A4	3121	A3	3140	B2	3168	B3	4103	C2	4151	B3	4162	C1	7109	A3		
2117	A3	2136	B1	2152	C3	2165	B3	3111	A3	3122	B3	3141	C2	3169	B2	4104	A2	4152	B3	4163	C1	7111	A1		

ECO 5 TUNER BOARD / copper side view



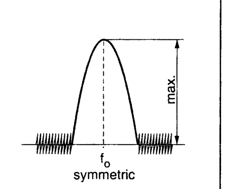
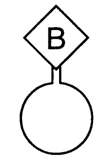
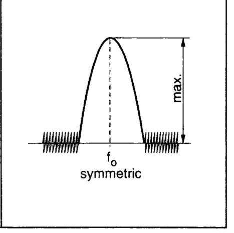
41.. Chip jumper (not all items shown in schematic diagram)

marked components to be assembled as service solution for ***Local/DX*** - switching

This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram respectively partslist.

ECO5 3396 stage .2, 250698

TUNER ADJUSTMENT TABLE (**ECO5** FM/MW- and FM/MW/LW - versions with AM-frame aerial)

Waverange	Input frequency	Input	Tuned to	Adjust	Output	Scope/Voltmeter
VARICAP ALIGNMENT						
FM 87.5 - 108MHz (65.81 - 74, 87.5 - 108MHz)			108MHz	5130	1	8V ±0.2V
			87.5MHz (65.81MHz)	check		4.3V ±0.5V (1.2V ±0.5V)
MW FM/AM-version, 10kHz grid 530 - 1700kHz			1700kHz	5123		8V ±0.2V
			530kHz	check		1.1V ±0.4V
FM/MW-version, 9kHz grid 531 - 1602kHz			1602kHz	5123		6.9V ±0.2V
			531kHz	check		1.1V ±0.4V
LW 153 - 279kHz			279kHz	5122		8V ±0.2V
			153kHz	check		1.1V ±0.4V
MW FM/MW/LW- version, 9kHz grid 531 - 1602kHz			1602kHz	5123		8V ±0.2V
			531kHz	check		1.1V ±0.4V
FM IF						
FM	10.7MHz, 50mV continuous wave	F	IC 7101 21 shortcircuit to block AFC 2141	5119	2	0 ± 3 mV DC
FM RF						
FM 87.5 - 108MHz (65.81 - 74, 87.5 - 108MHz)	108MHz	A mod=1kHz Δf=±22.5kHz	108MHz	2155	4	MAX
	87.5MHz (65.81MHz)		87.5MHz (65.81MHz)	5131		
VCO						
FM	98MHz, 1mV continuous wave	A	98MHz	3142	3	152kHz ±1kHz [1]
AM IF						
MW	450kHz connect pin 6 of IC 7101 (AM Osc.) with short wire to ground (pin 4)	C Δf=±15kHz V_{RF} = 3mV	IC 7101 36 100nF 220R	5111	4	 max. f_o symmetric
			IC 7101 40 100nF 220R see remark [2]	5112		
AM AFC **MW**		C continuous wave V_{RF} = 10mV		5114	2	0 ± 2 mV DC
AM RF [3]						
MW [4] FM/MW/LW- and FM/MW-version (9kHz grid) 531 - 1602kHz	1494kHz	B  Δf = ±30kHz V_{RF} as low as possible	1494kHz	2106	4	 max. f_o symmetric
	558kHz		558kHz	5102		
LW	198kHz		198kHz	5103		
MW FM/AM-version, 10kHz grid 530 - 1700kHz	1500kHz		1500kHz	2106		
	560kHz		560kHz	5102		

ECO5, discr. coil, 09797

Use service test program. By selecting the TUNER TEST test frequencies will be stored as preset frequencies automatically.

[1] If sensitivity of frequency counter is too low adjust to max. channel separation (input signal: stereo left 90% + 9%, adjust output on right channel to minimum)

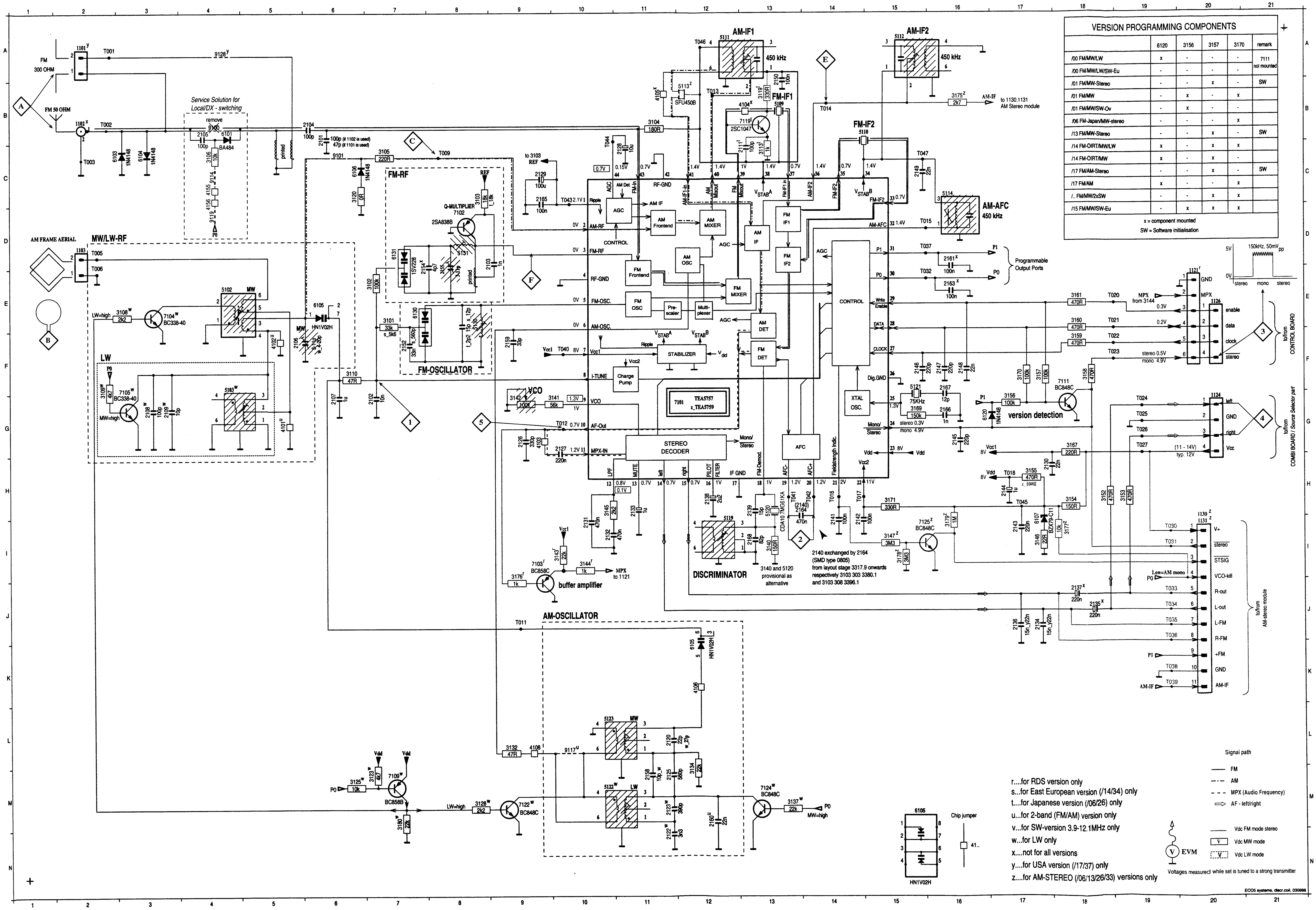
[2] RC network serves for damping the IF-filter while adjusting the other oe.

[3] For AM RF adjustments the original frame antenna has to be used !

[4] MW has to be aligned before LW.

↕ Repeat

TUNER BOARD ECO5 / Systems


FM 300 OHM
FM 50 OHM
AM FRAME AERIAL
MW/LW-RF
LW
Service Solution for Local/DX - switching
FM-RF
Q-MULTIPLIER
FM-OSCILLATOR
AM-IF1
AM-IF2
FM-IF1
FM-IF2
AM-AFC 450 kHz
450 kHz
TEA5757 / TEA5759
CONTROL
STEREO DECODER
STABILIZER
AM Frontend
AM MIXER
FM Frontend
FM OSC
FM MIXER
AM DET
FM DET
XTAL OSC.
VCO
Charge Pump
DISCRIMINATOR
buffer amplifier
version detection
AM-OSCILLATOR
Programmable Output Ports
to/from CONTROL BOARD
to/from COMBI BOARD / Source Selector part
to/from AM stereo module
to 1130,1131 AM Stereo module
2140 exchanged by 2164 (SMD type 0805) from layout stage 3317.9 onwards respectively 3103 303 3380.1 and 3103 308 3396.1
3140 and 5120 provisional as alternative
150kHz, 50mV pp
5V
0V
stereo
mono
stereo
Chip jumper
HN1V02H
Signal path
FM
AM
MPX (Audio Frequency)
AF - left/right
Vdc FM mode stereo
Vdc MW mode
Vdc LW mode
EVM
ECO5 systems, discr.coil, 030998

VERSION PROGRAMMING COMPONENTS

	6120	3156	3157	3170	remark
/00 FM/MW/LW	x	-	-	-	7111 not mounted
/00 FM/MW/LW/SW-Eu	-	-	-	-	
/01 FM/MW-Stereo	-	-	x	-	SW
/01 FM/MW	-	x	-	x	
/01 FM/MW/SW-Ov	-	x	-	-	
/06 FM-Japan/MW-stereo	-	-	-	x	
/13 FM/MW-Stereo	-	-	x	-	SW
/14 FM-OIRT/MW/LW	x	-	x	x	
/14 FM-OIRT/MW	x	-	x	-	
/17 FM/AM-Stereo	-	-	x	-	SW
/17 FM/AM	x	-	-	x	
/.. FM/MW/2xSW	-	-	x	x	
/15 FM/MW/SW-Eu	-	x	x	x	

x = component mounted
SW = Software initialisation

r....for RDS version only
s...for East European version (/14/34) only
t....for Japanese version (/06/26) only
u...for 2-band (FM/AM) version only
v...for SW-version 3.9-12.1MHz only
w...for LW only
x....not for all versions
y....for USA version (/17/37) only
z....for AM-STEREO (/06/13/26/33) versions only

Voltages measured while set is tuned to a strong transmitter

1101	A 1
1102	B 2
1103	D 2
1121	E20
1124	G20
1126	E20
1130	I20
1131	I20
2101	C 6
2102	G 7
2103	D 9
2104	B 6
2106	F 5
2107	G 6
2108	G 3
2109	G 3
2111	C13
2120	L11
2122	N11
2123	M11
2125	M11
2126	G 9
2127	G10
2128	C11
2129	C 9
2130	H17
2131	I10
2132	I10
2133	H11
2134	J17
2135	J18
2136	J17
2137	J18
2138	H12
2139	H13
2140	H14
2141	H14
2142	H14
2143	I17
2144	H17
2145	G16
2146	F15
2147	F16
2148	F16
2149	C15
2150	B13
2152	F 7
2153	E 8
2154	E 7
2155	D 8
2158	M11
2159	F 9
2160	M12
2161	D16
2163	E16
2164	H14
2165	C 9
2166	G16
2167	F16
2168	I 13
3101	E 7
3102	E 7
3103	C 8
3104	B11
3105	C 7
3108	E 3
3109	F 2
3110	F 6
3113	C13
3119	B13
3120	C 6
3123	M 7
3125	M 6
3128	M 8
3132	L 9
3134	M12
3137	M13
3140	I13
3141	G10
3142	G 9
3143	I10
3144	I10
3145	H10
3146	I17
3147	I15
3152	H18
3153	H19
3154	H18
3155	H17
3156	G17
3157	F17
3158	F18
3159	F18
3160	E18
3161	E18
3167	G18
3169	G15
3170	F17
3171	H15
3175	B16
3176	J 9
3177	I18
3178	I15
3179	I16
3180	M7
4101	G 5
4102	F 5
4103	G 9
4104	B13
4105	B11
4106	K12
4108	L 9
5102	E 4
5103	F 4
5109	B13
5110	B14
5111	A13
5112	A15
5113	B12
5114	C16
5119	I 12
5120	H13
5121	F15
5122	M11
5123	L11
5130	E 8
5131	D 8
6103	C 2
6104	C 3
6105	K12
6105	E 6
6106	C 6
6107	H17
6120	G16
6130	E 7
6131	D 7
7101	G11
7102	D 8
7103	I 9
7104	E 3
7105	F 2
7109	M 7
7111	F18
7119	B13
7122	M 9
7124	M13
7125	I16
9100	B 4
9101	C 6
9117	L10
9128	A 4

ELECTRICAL PARTS LIST - ECO5 TUNER BOARD

MISCELLANEOUS

1101	4822 267 31505	Antenna Socket 300R	
1102	4822 267 10283	Antenna Socket Coax IEC 75R	

CAPACITORS

2101	5322 122 32531	100pF 5% 50V	
2101	4822 126 13692	47pF 1% 63V	for USA
2102	4822 122 33177	10nF 20% 50V	
2103	5322 122 34123	1nF 10% 50V	
2104	4822 122 33195	100pF 10% 50V	
2106	4822 125 50355	Trimmer 4-20pF	for LW version
2106	4822 125 60101	Trimmer 3-11pF 100V	
2107	4822 121 51319	1µF 10% 63V	
2108	5322 122 32531	100pF 5% 50V	for LW version
2109	5322 122 32448	10pF 5% 50V	for LW version
2120	4822 126 13691	27pF 1% 63V	for LW version
2120	5322 122 32658	22pF 5% 50V	
2122	4822 122 33891	3,3nF 10% 63V	for LW version
2125	4822 121 51381	560pF 5% 400V	
2126	5322 122 31863	330pF 5% 50V	
2127	4822 126 13473	220nF +80/-20% 50V	
2128	4822 124 41579	10µF 20% 50V	
2129	4822 124 41584	100µF 20% 10V	
2130	4822 126 11585	22nF+80/- 20% 25V	
2131	4822 122 33325	470nF 16V	
2132	4822 122 33325	470nF 16V	
2131	4822 126 13482	470nF +80/- 20% 16V	
2132	4822 126 13482	470nF +80/- 20% 16V	
2133	4822 124 40242	1µF 20% 63V	
2134	4822 126 13188	15nF 5% 63V	
2134	5322 122 32654	22nF 10% 63V	for USA
2135	4822 124 40746	0,22µF 20% 63V	
2136	4822 126 13188	15nF 5% 63V	
2136	5322 122 32654	22nF 10% 63V	for USA
2137	4822 124 40746	0,22µF 20% 63V	
2138	4822 124 41576	2,2µF 20% 50V	
2139	4822 126 14236	50V 15pF 5%	
2140	4822 121 51252	470nF 5% 63V	
2141	4822 126 10002	100nF 20% 25V	
2142	4822 126 10002	100nF 20% 25V	
2143	4822 126 13473	220nF +80/-20% 50V	
2144	4822 124 40242	1µF 20% 63V	
2145	4822 122 33575	220pF 5% 50V	
2146	4822 122 33575	220pF 5% 50V	
2147	4822 122 33575	220pF 5% 50V	
2148	4822 126 11585	22nF+80/- 20% 25V	
2149	5322 122 32654	22nF 10% 63V	
2150	4822 122 31947	100nF 20% 63V	
2152	5322 116 80853	560pF 5% 63V	for East. Europe
2152	4822 126 12105	33nF 5% 63V	
2153	4822 122 32139	12pF 2% 63V	for East. Europe
2153	4822 122 32504	15pF 2% 63V	
2155	4822 125 60101	Trimmer 3-11pF 100V	
2158	5322 122 32448	10pF 5% 50V	for LW version
2159	5322 122 32659	33pF 5% 50V	
2160	5322 122 32654	22nF 10% 63V	
2161	4822 126 10002	100nF 20% 25V	
2163	4822 126 10002	100nF 20% 25V	
2164	4822 126 13482	470nF +80/- 20% 16V	
2165	4822 126 10002	100nF 20% 25V	
2166	5322 122 34123	1nF 10% 50V	
2167	4822 122 32139	12pF 2% 63V	
2168	4822 126 13695	82pF 1% 63V	

RESISTORS

3101	4822 051 20562	5k6 5% 0,1W	for East. Europe
3101	4822 051 20333	33k 5% 0,1W	
3102	4822 051 20104	100k 5% 0,1W	
3103	4822 117 10965	18k 1% 0,1W	
3104	4822 117 11448	180R 1% 0,1W	
3105	4822 116 83872	220R 5% 0,5W	
3108	4822 117 11449	2k2 1% 0,1W	for LW version
3109	4822 051 20472	4k7 5% 0,1W	for LW version
3110	4822 116 52195	47R 5% 0,5W	
3120	4822 051 20008	0R Jumper 0805	
3123	4822 051 20472	4k7 5% 0,1W	for LW version
3125	4822 117 10833	10k 1% 0,1W	for LW version
3128	4822 117 11449	2k2 1% 0,1W	for LW version
3132	4822 116 52195	47R 5% 0,5W	
3134	4822 051 20223	22k 5% 0,1W	
3137	4822 051 20223	22k 5% 0,1W	for LW version
3140	4822 051 20008	0R Jumper 0805	
		5120=CDA10.7MG40K	
3140	4822 117 10353	150R 1% 0,1W	
		5120=CDA10.7MG61KA	
3141	4822 051 20563	56k 5% 0,1W	
3142	4822 100 11163	Trimmer 100k 30% 0,1W	
3143	4822 051 20223	22k 5% 0,1W	for RDS version
3144	4822 051 10102	1k 2% 0,25W	for RDS version
3145	4822 117 11449	2k2 1% 0,1W	
3146	4822 051 20229	22R 5% 0,1W	
3152	4822 116 83883	470R 5% 0,5W	
3153	4822 051 20471	470R 5% 0,1W	
3154	4822 116 83868	150R 5% 0,5W	
3155	4822 051 20471	470R 5% 0,1W	
3156	4822 051 20104	100k 5% 0,1W	for /21/30/33 only
3157	4822 116 52234	100k 5% 0,5W	for East. Europe
3158	4822 116 83883	470R 5% 0,5W	
3159	4822 116 83883	470R 5% 0,5W	
3160	4822 116 83883	470R 5% 0,5W	
3161	4822 116 83883	470R 5% 0,5W	
3167	4822 117 11503	220R 1% 0.1W	
3169	4822 051 20154	150k 5% 0,1W	
3170	4822 116 52234	100k 5% 0,5W	
3171	4822 116 52219	330R 5% 0,5W	

ELECTRICAL PARTS LIST - ECO5 TUNER BOARD

3176	4822 051 10102	1k 2% 0,25W	for RDS version
3180	4822 051 20223	22k 5% 0,1W	for LW version
4101	4822 051 20008	0R Jumper 0805	for 2-Band only
4102	4822 051 20008	0R Jumper 0805	for 2-Band only
4103	4822 051 20008	0R Jumper 0805	
4104	4822 051 20008	0R Jumper 0805	
4105	4822 051 20008	0R Jumper 0805	
4106	4822 051 20008	0R Jumper 0805	
4108	4822 051 20008	0R Jumper 0805	
4111	4822 051 20008	0R Jumper 0805	
4120	4822 051 20008	0R Jumper 0805	
4150	4822 051 10008	0R Jumper 1206	
4151	4822 051 20008	0R Jumper 0805	
4152	4822 051 10008	0R Jumper 1206	
4153	4822 051 10008	0R Jumper 1206	
4154	4822 051 10008	0R Jumper 1206	
4155	4822 051 10008	0R Jumper 1206	
4156	4822 051 20008	0R Jumper 0805	
4157	4822 051 10008	0R Jumper 1206	
4158	4822 051 10008	0R Jumper 1206	
4159	4822 051 10008	0R Jumper 1206	
4162	4822 051 10008	0R Jumper 1206	

COILS & FILTERS

5102	4822 157 71634	MW RF Coil	
5103	4822 157 71635	LW RF Coil	for LW version
5109	4822 242 70665	Ceram Filter 10,7MHz	
5110	4822 242 70665	Ceram Filter 10,7MHz	
5111	4822 158 60511	AM-IF Filter 450kHz	
5112	4822 157 70302	AM-IF Filter 450kHz	
5114	4822 157 70302	AM-IF Filter 450kHz	
5119	4822 157 11443	Discriminator 10,7MHz	
5120	4822 242 82065	Cer. Disc. 10,7MG40K	
5120	4822 242 10251	Cer. Disc.10,7MG61KA-TF21	
5121	4822 242 10261	Quartz 75kHz	
5122	4822 157 60517	Osc. Coil LW	for LW version
5123	4822 157 60517	Osc. Coil MW	
5130	4822 156 30947	RF-Coil 1.5T	
5131	4822 156 30947	RF-Coil 1.5T	

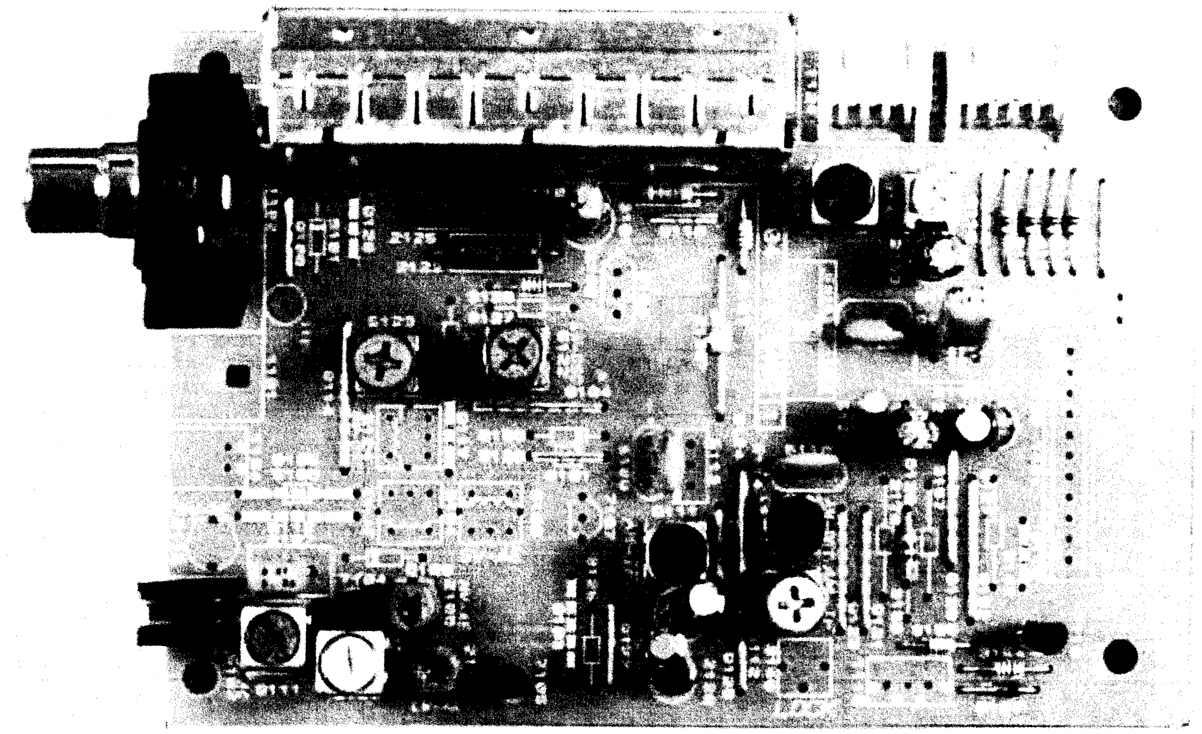
DIODES

6103	4822 130 30621	1N4148	
6104	4822 130 30621	1N4148	
6105	4822 130 83075	HN1V02H-B	
6106	4822 130 30621	1N4148	
6107	4822 130 34488	BZX79-B11	
6120	4822 130 30621	1N4148	not for /21/30/33
6130	4822 130 82833	1SV228	
6131	4822 130 82833	1SV228	

TRANSISTORS & INTEGRATED CIRCUITS

7101	4822 209 90924	TEA5757H/V1	
7102	4822 130 60093	2SA838B	
7103	4822 130 42513	BC858C	for RDS version
7104	5322 130 44779	BC338-40	for LW version
7105	5322 130 44779	BC338-40	for LW version
7109	5322 130 41983	BC858B	for LW version
7111	5322 130 42136	BC848C	
7122	5322 130 42136	BC848C	for LW version
7124	5322 130 42136	BC848C	for LW version

Note: Only the parts mentioned in this list are normal service spare parts.



TUNER 95 BOARD

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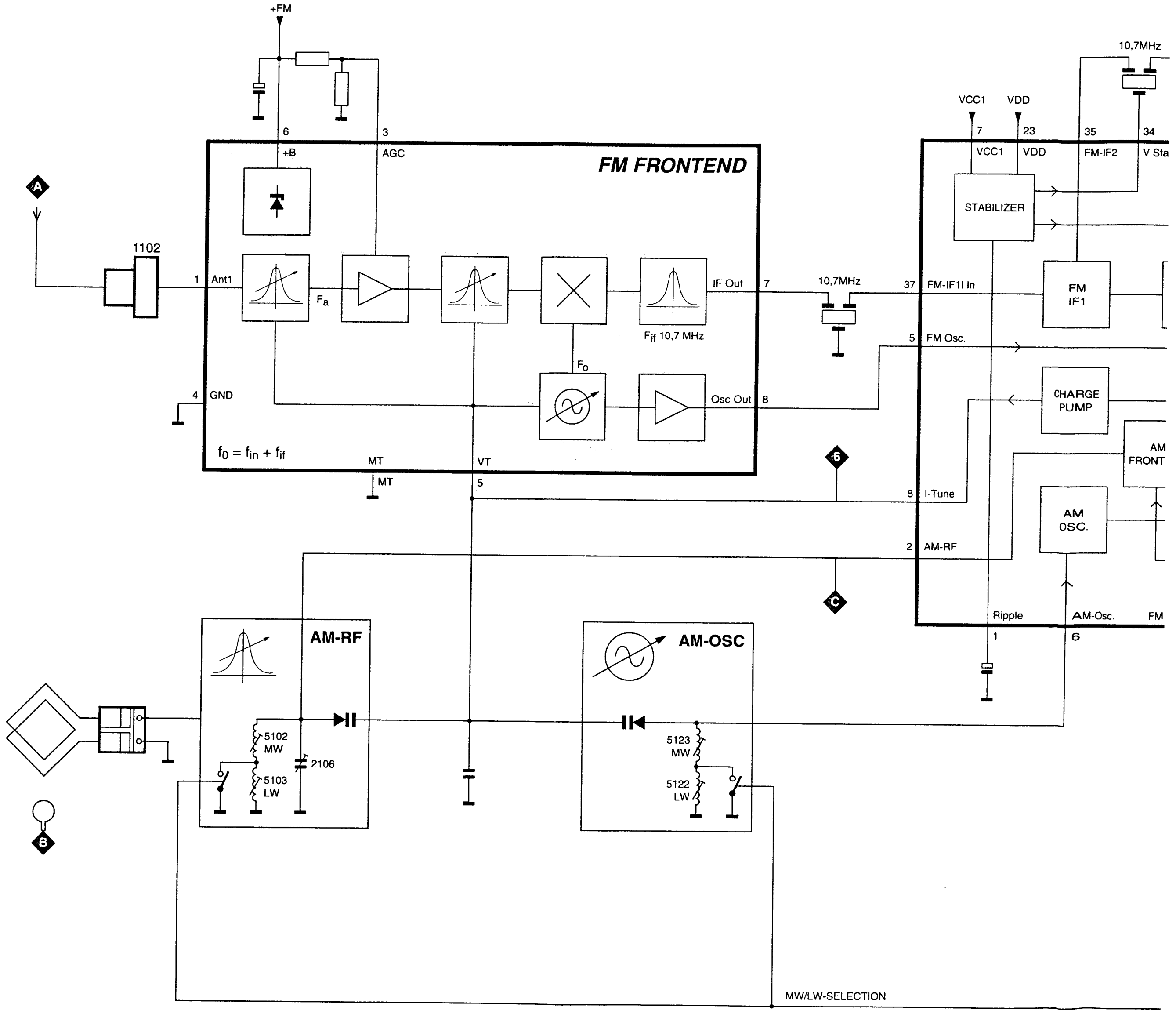
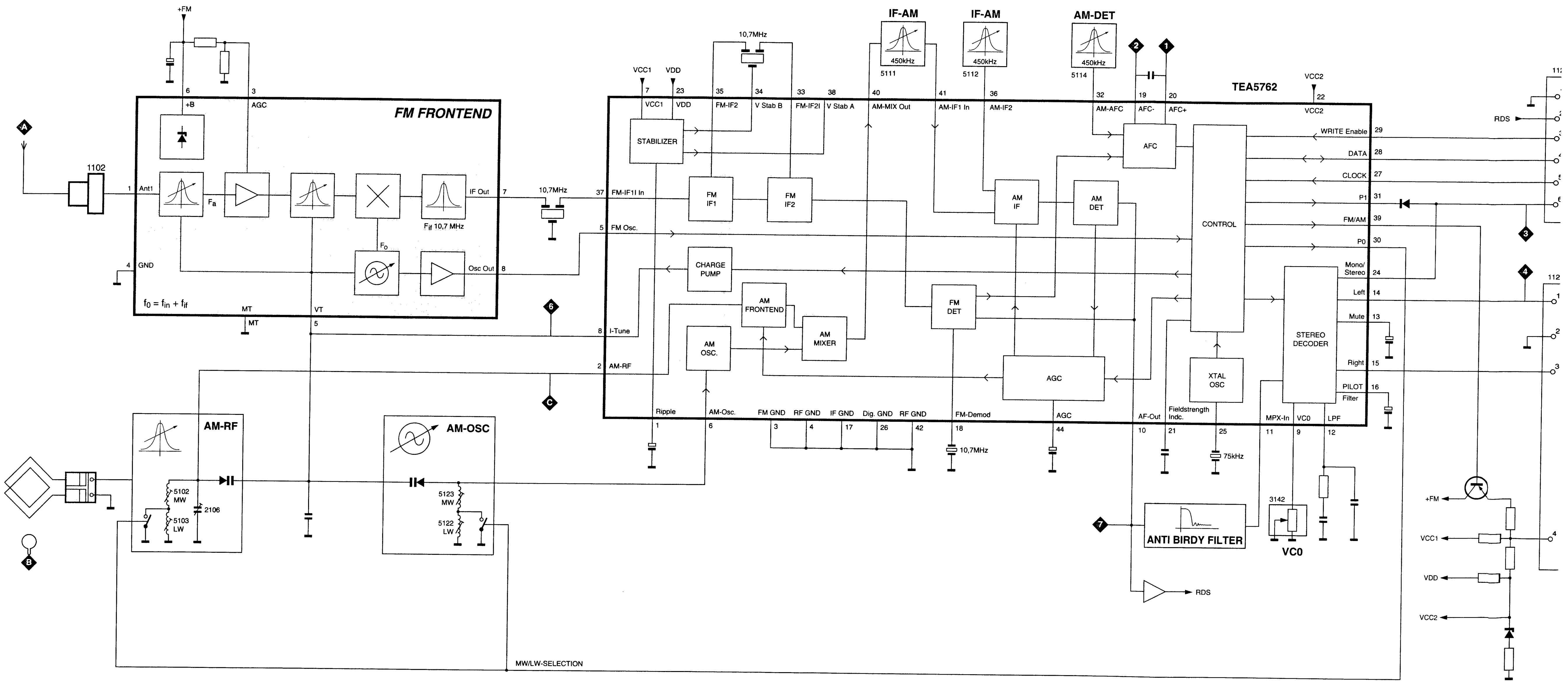
BLOCKDIAGRAM

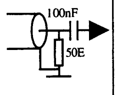


+FM
6
3
+B
AGC
FM FRONTEND
A
1102
1
Ant1
Fa
IF Out
7
Fif 10,7 MHz
Fo
4
GND
Osc Out
8
f0 = fin + fif
MT
MT
VT
5
10,7MHz
10,7MHz
VCC1
VDD
7
23
35
34
VCC1
VDD
FM-IF2
V Sta
STABILIZER
37
FM-IF1I In
FM
IF1
5
FM Osc.
CHARGE
PUMP
6
AM
FRONT
8
I-Tune
AM
OSC.
2
AM-RF
C
Ripple
AM-Osc.
FM
1
6
AM-RF
5102
MW
2106
5103
LW
AM-OSC
5123
MW
5122
LW
B
MW/LW-SELECTION

BLOCKDIAGRAM


+FM
6
3
+B
AGC
FM FRONTEND
A
1102
1 Ant1
Fa
IF Out 7
Fif 10,7 MHz
Fo
Osc Out 8
4 GND
f0 = fin + fif
MT
VT
MT
5
10,7MHz
VCC1
VDD
7
23
35
34
33
38
40
41
36
32
19
20
VCC1
VDD
FM-IF2
V Stab B
FM-IF2I
V Stab A
AM-MIX Out
AM-IF1 In
AM-IF2
AM-AFC
AFC-
AFC+
IF-AM
450kHz
5111
IF-AM
450kHz
5112
AM-DET
450kHz
5114
TEA5762
VCC2
22
VCC2
STABILIZER
37 FM-IF1I In
FM IF1
FM IF2
5 FM Osc.
CHARGE PUMP
AM FRONTEND
AM OSC.
AM MIXER
8 I-Tune
2 AM-RF
AM IF
AM DET
FM DET
AGC
AFC
CONTROL
XTAL OSC
STEREO DECODER
WRITE Enable 29
DATA 28
CLOCK 27
P1 31
FM/AM 39
P0 30
Mono/ Stereo 24
Left 14
Mute 13
Right 15
PILOT Filter 16
Ripple
AM-Osc.
FM GND
RF GND
IF GND
Dig. GND
RF GND
FM-Demod
AGC
AF-Out
Fieldstrength Indc.
MPX-In
VC0
LPF
1
6
3
4
17
26
42
18
44
10
21
25
11
9
12
10,7MHz
75kHz
6
C
B
AM-RF
5102 MW
5103 LW
2106
AM-OSC
5123 MW
5122 LW
7
ANTI BIRDY FILTER
3142
VC0
RDS
MW/LW-SELECTION
1
2
3
4
RDS
112
1
2
3
4
+FM
VCC1
VDD
VCC2
4

TUNER 95 bis Adjustment Table (FM, MW, LW with Frame antenna)

Waverange	Input frequency	Input	Set tuned to	Adjust	Output	Scope / Voltmeter
VARICAP ALIGNMENT						
FM (50)			108 MHz	check	6	7 ... 9V
87.5 - 108 MHz			87.5 MHz	check		1.3 ... 2V
MW (9)			1602 kHz	5123		8.3V ± 0.2V
531 - 1602 kHz			531 kHz	check		1V ± 0.4V
LW (3)			279 kHz	5122		8.3V ± 0.2V
153 - 279 kHz			153 kHz	check		1V ± 0.4V
FM - DETECTION						
FM	98 MHz 1mV continuous wave *short pin 21 (IC7101) to ground*	A	98 MHz	5107	1 2	0mV ± 3mV
FM - VCO						
FM	98 MHz 1 mV continuous wave	A	98 MHz	3142	3	152kHz ± 1 kHz
DISTORTION						
FM	98 MHz 1 mV 90 % L + 9 % pilot mod = 1kHz	A	98MHz	mixcoil inside Tuner 1110	4	Distortion minimum
AM - IF						
MW	450kHz Δf = 10kHz Low as possible Swept signal		MW	5111	7	symmetrical and max. height ↕
				5112		
	450kHz continuous wave	C		5114	1 2	0mV ± 2mV
AM - RF						
MW	558kHz Mod = 1kHz 30 % AM 1494 kHz	B	558kHz	5102	7	MAX ↕
			1494kHz	2106		
LW	198kHz mod = 1kHz 30 % AM	*	198kHz	5103		MAX

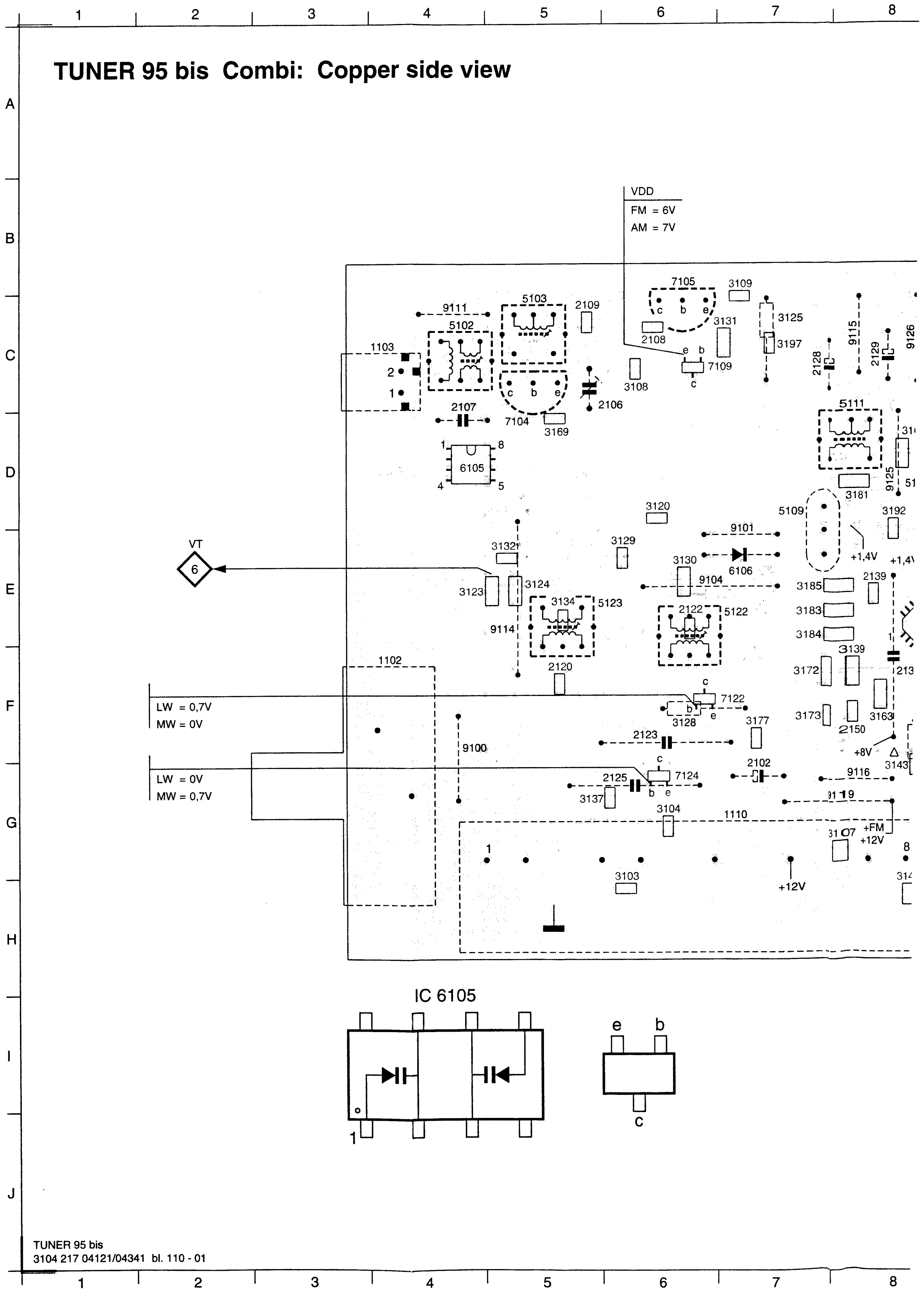
adjtable for 3104 217 04121/04341

* Signal send via a frame antenna
(..) = tuning grid in kHz

↕ repeat

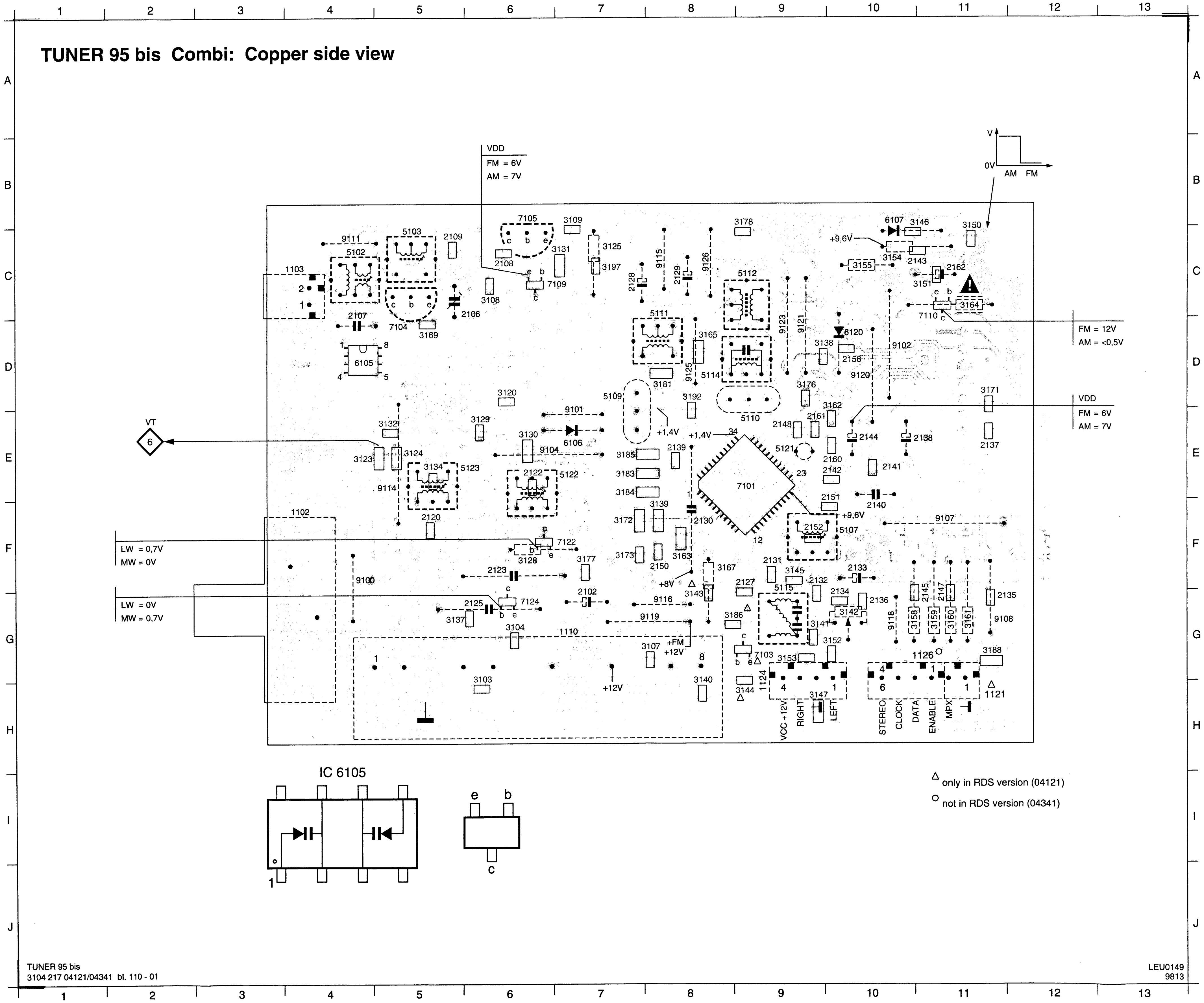
1102	F4	2107	C4	2128	C7	2136	G10	2144	E10	2160	E9	3120	D6	3132	E5	3143	G8	3153	G9	3163	F8
1103	C4	2108	C6	2129	C8	2137	E11	2145	G11	2161	E9	3123	E4	3134	E5	3144	H9	3154	C10	3164	C11
1110	G7	2109	C5	2130	F8	2138	E10	2147	G11	2162	C11	3124	E5	3137	G5	3145	F9	3155	C10	3165	D8
1121	H11	2120	F5	2131	F9	2139	E8	2148	E9	3103	H6	3125	C7	3138	D9	3146	B10	3158	G11	3167	F8
1124	H9	2122	E6	2132	F9	2140	F10	2150	F8	3104	G6	3128	F6	3139	F8	3147	H9	3159	G11	3169	D5
1126	G10	2123	F6	2133	F10	2141	E10	2151	F9	3107	G7	3129	E6	3140	H8	3150	C11	3160	G11	3171	D11
2102	G7	2125	G6	2134	G10	2142	E9	2152	F9	3108	C6	3130	E6	3141	G9	3151	C10	3161	G11	3172	F7
2106	C5	2127	F9	2135	G11	2143	C10	2158	D10	3109	B7	3131	C6	3142	G10	3152	G9	3162	D9	3173	F7

TUNER 95 bis Combi: Copper side view


1
2
3
4
5
6
7
8
A
B
C
D
E
F
G
H
I
J
VDD
FM = 6V
AM = 7V
7105
3109
3125
3197
9115
2129
2128
9126
9111
5103
5102
2109
2108
3131
7109
1103
3108
2107
7104
3169
2106
5111
6105
9125
3181
5109
3192
3120
3129
9101
3130
6106
9104
+1,4V
VT
6
3132
3123
3124
3134
5123
9114
2122
5122
3185
3183
3184
2139
3139
3172
2120
1102
7122
3128
3177
3173
3163
2150
LW = 0,7V
MW = 0V
2123
9100
+8V
3143
2102
LW = 0V
MW = 0,7V
2125
7124
9116
3137
3104
1110
3119
3107
+FM
+12V
3103
+12V
IC 6105
e
b
c
TUNER 95 bis
3104 217 04121/04341 bl. 110 - 01

1102	F4	2107	C4	2128	C7	2136	G10	2144	E10	2160	E9	3120	D6	3132	E5	3143	G8	3153	G9	3163	F8	3176	D9	3188	G11	5111	C8	6106	E7	7110	D11	9108	G11	9121	D9
1103	C4	2108	C6	2129	C8	2137	E11	2145	G11	2161	E9	3123	E4	3134	E5	3144	H9	3154	C10	3164	C11	3177	F7	3192	D8	5112	C9	6107	B10	7122	F7	9111	C4	9123	D9
1110	G7	2109	C5	2130	F8	2138	E10	2147	G11	2162	C11	3124	E5	3137	G5	3145	F9	3155	C10	3165	D8	3178	B8	3197	C7	5114	D8	6120	D10	7124	G6	9114	E5	9125	D8
1121	H11	2120	F5	2131	F9	2139	E8	2148	E9	3103	H6	3125	C7	3138	D9	3146	B10	3158	G11	3167	F8	3181	D8	5102	C4	5115	G9	7101	E9	9100	F4	9115	C8	9126	C8
1124	H9	2122	E6	2132	F9	2140	F10	2150	F8	3104	G6	3128	F6	3139	F8	3147	H9	3159	G11	3169	D5	3183	E7	5103	C5	5121	E9	7103	G9	9101	E7	9116	G8		
1126	G10	2123	F6	2133	F10	2141	E10	2151	F9	3107	G7	3129	E6	3140	H8	3150	C11	3160	G11	3171	D11	3184	E7	5107	F10	5122	E7	7104	D5	9102	D10	9118	G10		
2102	G7	2125	G6	2134	G10	2142	E9	2152	F9	3108	C6	3130	E6	3141	G9	3151	C10	3161	G11	3172	F7	3185	E7	5109	D7	5123	E5	7105	B6	9104	E6	9119	G7		
2106	C5	2127	F9	2135	G11	2143	C10	2158	D10	3109	B7	3131	C6	3142	G10	3152	G9	3162	D9	3173	F7	3186	G8	5110	E9	6105	D4	7109	C6	9107	F11	9120	D10		

TUNER 95 bis Combi: Copper side view


1 2 3 4 5 6 7 8 9 10 11 12 13
A B C D E F G H I J
VDD
FM = 6V
AM = 7V
V
0V
AM FM
FM = 12V
AM = <0,5V
VDD
FM = 6V
AM = 7V
VT
6
LW = 0,7V
MW = 0V
LW = 0V
MW = 0,7V
7101
7105
7109
7104
7110
7122
7124
7103
6105
6106
6107
6120
5102
5103
5107
5109
5110
5111
5112
5114
5115
5121
5122
5123
1102
1103
1110
1124
1126
1121
9100
9101
9102
9104
9107
9111
9114
9116
9118
9119
9120
9121
9123
9125
9126
9115
+9,6V
+1,4V
+8V
+FM
+12V
VCC +12V
RIGHT
LEFT
STEREO
CLOCK
DATA
ENABLE
MPX
IC 6105
e b
c
1

△ only in RDS version (04121)

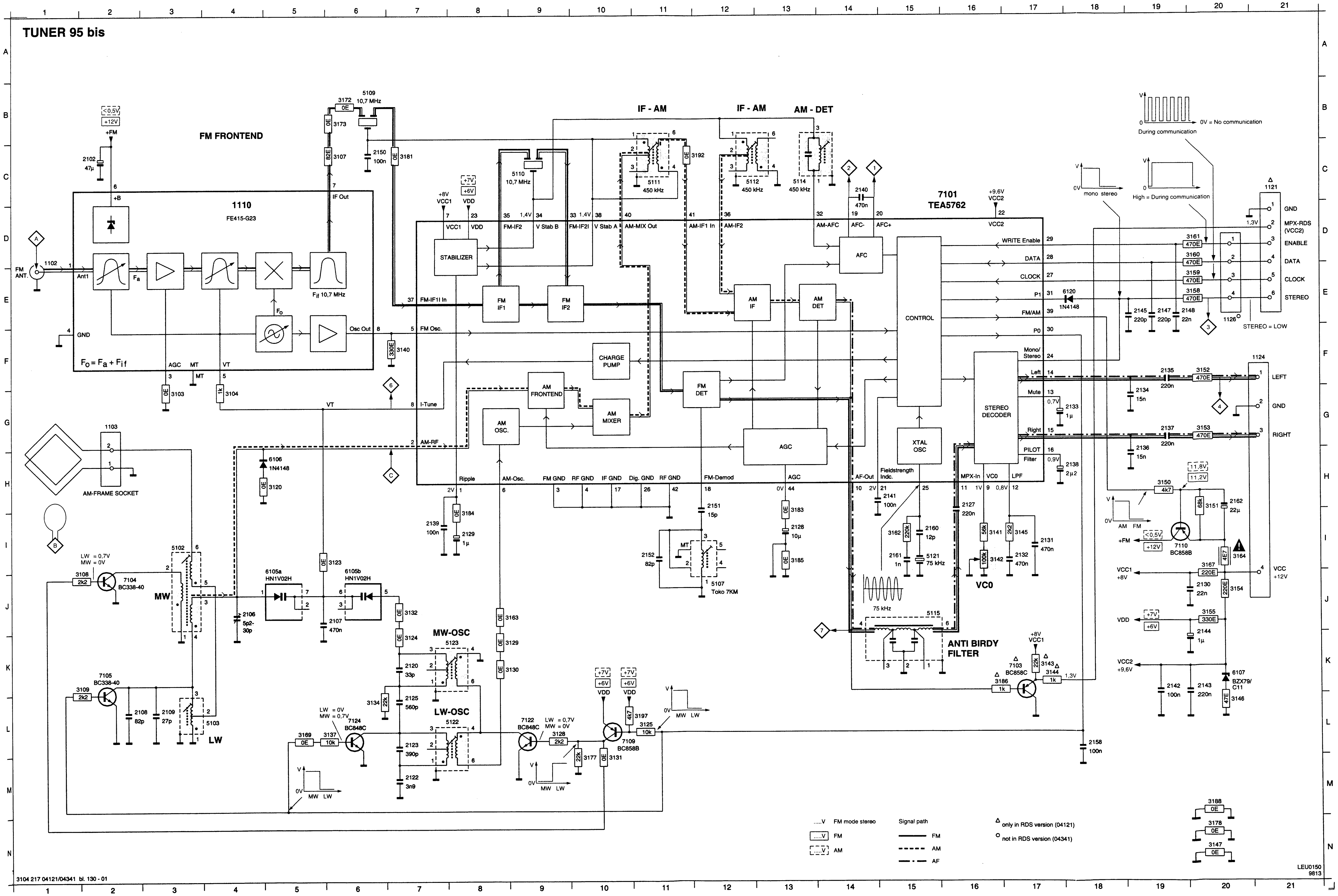
○ not in RDS version (04341)

TUNER 95 bis
3104 217 04121/04341 bl. 110 - 01

LEU0149
9813

1102	D1
1103	G2
1110	D4
1121	C21
1124	F21
1126	E20
2102	C2
2106	J4
2107	J6
2108	L2
2109	L3
2120	K7
2122	M7
2123	L7
2125	L7
2127	H16
2128	I13
2129	I8
2130	J20
2131	I17
2132	I17
2133	G18
2134	G19
2135	F19
2136	H19
2137	G19
2138	H18
2139	I7
2140	C14
2141	H15
2142	K19
2143	K20
2144	K20
2145	E19
2147	E19
2148	E19
2150	C6
2151	H12
2152	I11
2158	L18
2160	I15
2161	I15
2162	H20
3103	G3
3104	G4
3107	C6
3108	J1
3109	K1
3120	H5
3123	I6
3124	K7
3125	L11
3128	L9
3129	K8
3130	K8
3131	M10
3132	J7
3134	L6
3137	L5
3140	F7
3141	I16
3142	I16
3143	K17
3144	K17
3145	I17
3146	L20
3147	N20
3150	H19
3151	I20
3152	F20
3153	G20
3154	J20
3155	J20
3158	E19
3159	E19
3160	D19
3161	D19
3162	I15
3163	J8
3164	I20
3167	I20
3169	L5
3172	B6
3173	B6
3177	M10
3178	N20
3181	C7
3183	I13
3184	I8
3185	I13
3186	K16
3188	M20
3192	C12
3197	L11
5102	I3
5103	L4
5107	J12
5109	B6
5110	C9
5111	C11
5112	C12
5114	C13
5115	J15
5121	I15
5122	L7
5123	K7
6105a	I5
6105b	I6
6106	H5
6107	K20
6120	E17
7101	C15
7103	K17
7104	J2
7105	K2
7109	L10
7110	I19
7122	L9
7124	L6

TUNER 95 bis


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21
A B C D E F G H I J K L M N
FM FRONTEND
1110
FE415-G23
+B
Ant1
Fa
Fif 10,7 MHz
Fo
Osc Out
IF Out
GND
Fo = Fa + Fif
AGC MT VT
FM ANT.
1102
2102 47µ
<0,5V
+12V
+FM
3173 0E
3172 0E
5109 10,7 MHz
3107 82E
2150 100n
3181 0E
3140 330E
3103 0E
3104 1k
5110 10,7 MHz
IF - AM
IF - AM
AM - DET
5111 450 kHz
5112 450 kHz
5114 450 kHz
3192 0E
2140 470n
7101
TEA5762
+8V VCC1
VDD
+7V
+6V
+9,6V VCC2
STABILIZER
FM IF1
FM IF2
AFC
CONTROL
CHARGE PUMP
AM FRONTEND
AM MIXER
AM OSC.
FM DET
AM IF
AM DET
AGC
XTAL OSC
STEREO DECODER
VCC1 VDD FM-IF2 V Stab B FM-IF2I V Stab A AM-MIX Out AM-IF1 In AM-IF2 AM-AFC AFC- AFC+ VCC2
FM-IF1I In
FM Osc.
I-Tune
AM-RF
VT
Ripple AM-Osc. FM GND RF GND IF GND Dig. GND RF GND FM-Demod AGC AF-Out Fieldstrength Indc. MPX-In VCO LPF
WRITE Enable 29
DATA 28
CLOCK 27
P1 31
FM/AM 39
P0 30
Mono/Stereo 24
Left 14
Mute 13
Right 15
PILOT Filter 16
6120 1N4148
2145 220p 2147 220p 2148 22n
3161 470E 3160 470E 3159 470E 3158 470E
1121
GND
MPX-RDS (VCC2)
ENABLE
DATA
CLOCK
STEREO
1126
STEREO = LOW
0V = No communication
During communication
High = During communication
mono stereo
1124
LEFT
GND
RIGHT
VCC +12V
2135 220n 3152 470E
2137 220n 3153 470E
2134 15n
2136 15n
2133 1µ
2138 2µ2
3150 4k7
11,8V
11,2V
3151 68k
2162 22µ
7110 BC858B
AM FM
3164 4E7
3167 220E
3154 220E
2130 22n
VCC1 +8V
3155 330E
2144 1µ
VDD
VCC2 +9,6V
2142 100n
2143 220n
6107 BZX79/C11
3146 47E
2139 100n
3184 0E
2129 1µ
2151 15p
2152 82p
5107 Toko 7KM
MT
3183 0E
2128 10µ
3185 0E
2141 100n
3162 220k
2160 12p
2161 1n
5121 75 kHz
3141 56k
3142 100k
3145 2k2
2132 470n
2131 470n
2127 220n
VCO
75 kHz
5115
ANTI BIRDY FILTER
2158 100n
+8V VCC1
7103 BC858C
3186 1k
3143 22k
3144 1k
1,3V
1103
AM-FRAME SOCKET
6106 1N4148
3120 0E
LW = 0,7V
MW = 0V
3108 2k2
7104 BC338-40
5102
MW
7105 BC338-40
3109 2k2
2108 82p
2109 27p
5103
LW
2106 5p2-30p
6105a HN1V02H
6105b HN1V02H
3123 0E
2107 470n
3132 0E
3124 0E
MW-OSC
5123
2120 33p
3134 22k
2125 560p
LW-OSC
5122
2123 390p
2122 3n9
3163 0E
3129 0E
3130 0E
3169 0E
3137 10k
7124 BC848C
7122 BC848C
3128 2k2
3177 22k
3131 0E
3197 4k7
3125 10k
7109 BC858B
MW LW
.....V FM mode stereo
FM
AM
Signal path
FM
AM
AF
only in RDS version (04121)
not in RDS version (04341)
3188 0E
3178 0E
3147 0E
LEU0150 9813

3104 217 04121/04341 bl. 130 - 01

ELECTRICAL PARTS LIST - TUNER 95 BOARD

MISCELLANEOUS

1102	4822 267 10283	Socket Coaxial IEC 75R
1103	4822 265 31184	JST Connector 2 pin
1110	4822 210 10739	Frontend Assembly FE415-G23

CAPACITORS

2102	4822 124 40433	47µF 20% 25V
2106	4822 125 60102	Trimmer 5,2-30pF 100V
2107	4822 121 51252	470nF 5% 63V
2108	4822 126 13695	82pF 1% 63V
2109	4822 126 13691	27pF 1% 63V
2120	5322 122 32659	33pF 5% 50V
2122	5322 126 10465	3,9nF 10% 50V
2123	4822 121 10766	390pF 1% 630V
2125	4822 121 10578	560pF 1% 630V
2127	4822 122 32927	220nF +80/-20% 50V
2128	4822 124 41579	10µF 20% 50V
2129	4822 124 40242	1µF 20% 63V
2130	4822 126 11585	22nF +80/-20% 25V
2131	4822 122 33325	470nF 16V
2132	4822 122 33325	470nF 16V
2133	4822 124 40242	1µF 20% 63V
2134	4822 126 13188	15nF 5% 63V
2135	4822 122 32927	220nF +80/-20% 50V
2136	4822 126 13188	15nF 5% 63V
2137	4822 122 32927	220nF +80/-20% 50V
2138	4822 124 41576	2,2µF 20% 50V
2139	4822 126 10002	100nF 20% 25V
2140	4822 121 51252	470nF 5% 63V
2141	4822 122 31947	100nF 20% 63V
2142	4822 122 31947	100nF 20% 63V
2143	4822 122 32927	220nF +80/-20% 50V
2144	4822 124 40242	1µF 20% 63V
2145	4822 122 33575	220pF 5% 50V
2147	4822 122 33575	220pF 5% 50V
2148	4822 122 33809	22nF 20% 50V
2150	4822 122 31947	100nF 20% 63V
2151	4822 126 14236	15pF 5% 50V
2152	4822 126 13695	82pF 1% 63V
2158	4822 122 31947	100nF 20% 63V
2160	4822 122 32139	12pF 2% 63V
2161	5322 122 34123	1nF 10% 50V
2162	4822 124 81151	22µF 50V

RESISTORS

3103	4822 051 20008	0R Jumper 0805
3104	4822 051 10102	1k 2% 0,25W
3107	4822 051 20829	82R 5% 0,1W
3108	4822 117 11449	2k2 1% 0,1W
3109	4822 117 11449	2k2 1% 0,1W
3120	4822 051 20008	0R Jumper 0805
3123	4822 051 10008	0R Jumper 1206
3124	4822 051 10008	0R Jumper 1206
3125	4822 116 83864	10k 5% 0,5W
3128	4822 116 52256	2k2 5% 0,5W
3129	4822 051 20008	0R Jumper 0805
3130	4822 051 10008	0R Jumper 1206
3131	4822 051 10008	0R Jumper 1206
3132	4822 051 20008	0R Jumper 0805
3134	4822 051 20223	22k 5% 0,1W
3137	4822 117 10833	10k 1% 0,1W
3138	4822 051 20008	0R Jumper 0805
3139	4822 051 10008	0R Jumper 1206
3140	4822 051 20331	330R 5% 0,1W
3141	4822 117 11148	56k 1% 0,1W
3142	4822 100 11163	Trimmer 100k 30% 0,1W
3143	4822 051 20223	22k 5% 0,1W
3144	4822 051 10102	1k 2% 0,25W
3145	4822 117 11449	2k2 1% 0,1W
3146	4822 051 20479	47R 5% 0,1W
3147	4822 051 10008	0R Jumper 1206
3150	4822 051 20472	4k7 5% 0,1W
3151	4822 051 20683	68k 5% 0,1W
3152	4822 051 20471	470R 5% 0,1W
3153	4822 051 20471	470R 5% 0,1W
3154	4822 116 83872	220R 5% 0,5W
3155	4822 116 52219	330R 5% 0,5W
3158	4822 116 83883	470R 5% 0,5W
3159	4822 116 83883	470R 5% 0,5W
3160	4822 116 83883	470R 5% 0,5W
3161	4822 116 83883	470R 5% 0,5W
3162	4822 117 13579	220k 1% 0,1W
3163	4822 051 10008	0R Jumper 1206
3164	4822 052 10478 ⚠	4R7 5% 0,33W
3165	4822 051 10008	0R Jumper 1206
3167	4822 116 83872	220R 5% 0,5W
3169	4822 051 20008	0R Jumper 0805
3171	4822 051 20008	0R Jumper 0805
3172	4822 051 10008	0R Jumper 1206
3173	4822 051 20008	0R Jumper 0805
3176	4822 051 20008	0R Jumper 0805
3177	4822 051 20223	22k 5% 0,1W
3178	4822 051 10008	0R Jumper 1206
3181	4822 051 10008	0R Jumper 1206
3183	4822 051 10008	0R Jumper 1206
3184	4822 051 10008	0R Jumper 1206
3185	4822 051 10008	0R Jumper 1206
3186	4822 051 10102	1k 2% 0,25W
3188	4822 051 10008	0R Jumper 1206
3192	4822 051 20008	0R Jumper 0805
3197	4822 051 20472	4k7 5% 0,1W

COILS & FILTERS

5102	4822 157 71634	MW Aerial
5103	4822 157 71635	LW Aerial

ELECTRICAL PARTS LIST - TUNER 95 BOARD

5107	4822 157 11443	FM Discriminator 10,7MHz
5109	4822 157 71639	Ceram Filter 10,7MHz
5110	4822 242 70665	Ceram Filter 10,7MHz
5111	4822 158 60511	AM-IF Filter 450kHz
5112	4822 157 70302	AM-IF Filter 450kHz
5114	4822 157 70302	AM_IF Filter 450kHz
5115	4822 157 71636	Anti-Birdy Filter
5121	4822 242 10261	X'tal Resonator 75kHZ
5122	4822 157 60517	RF Coil AM
5123	4822 157 60517	RF Coil AM

DIODES

6105	4822 130 83075	HN1V02H-B
6106	4822 130 30621	1N4148
6107	4822 130 34488	BZX79-C11
6120	4822 130 30621	1N4148

TRANSISTORS & INTEGRATED CIRCUITS

7101	4822 209 90315	TEA5762H/V1
7103	4822 130 42513	BC858C
7104	5322 130 44779	BC338-40
7105	5322 130 44779	BC338-40
7109	5322 130 41983	BC858B
7110	5322 130 41983	BC858B
7122	5322 130 42136	BC848C
7124	5322 130 42136	BC848C

Note : Only the parts mentioned in this list are normal service spare parts.

AV BOARD

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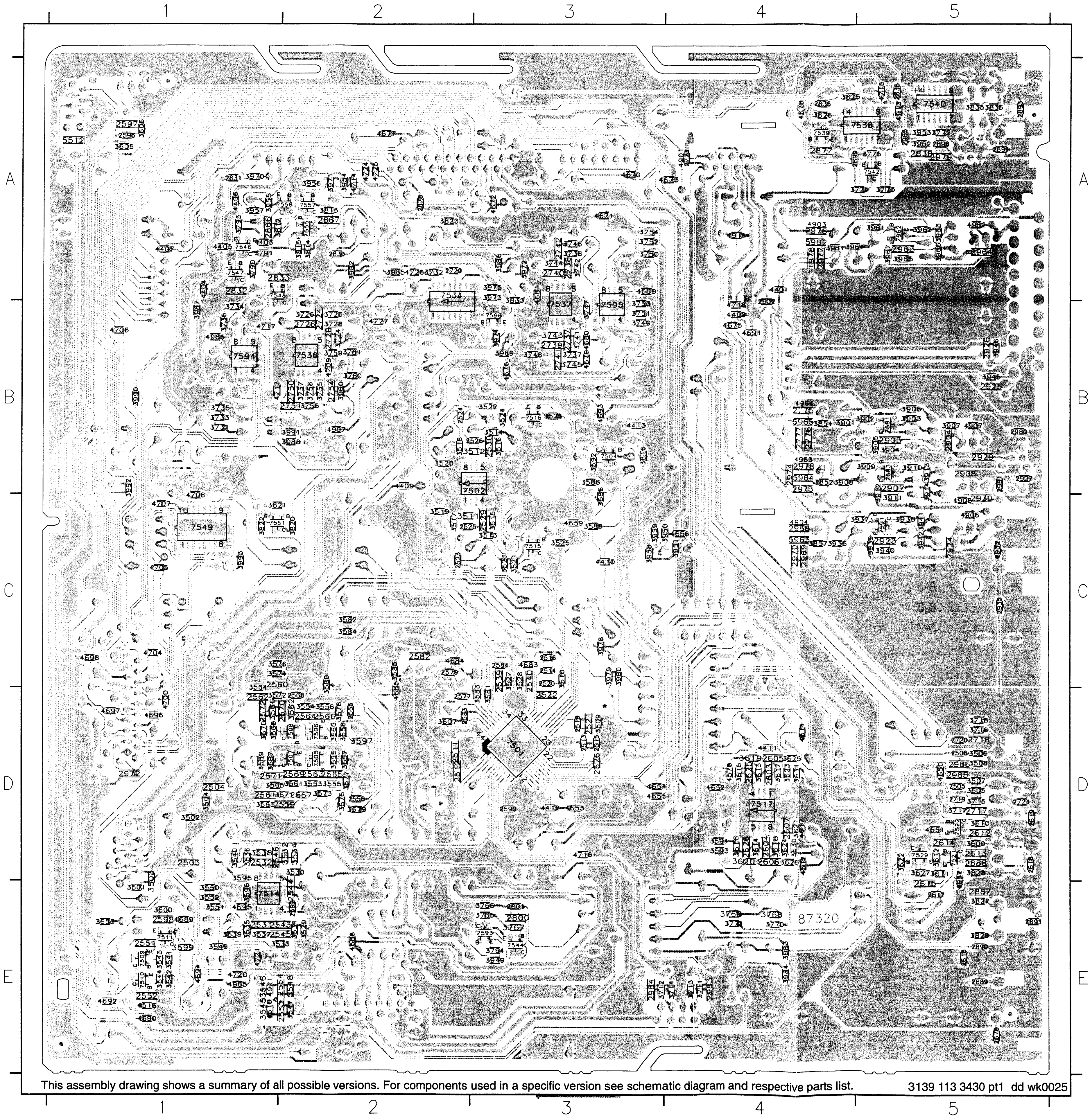
NOTE :

AV BOARD - CHIP LAYOUT

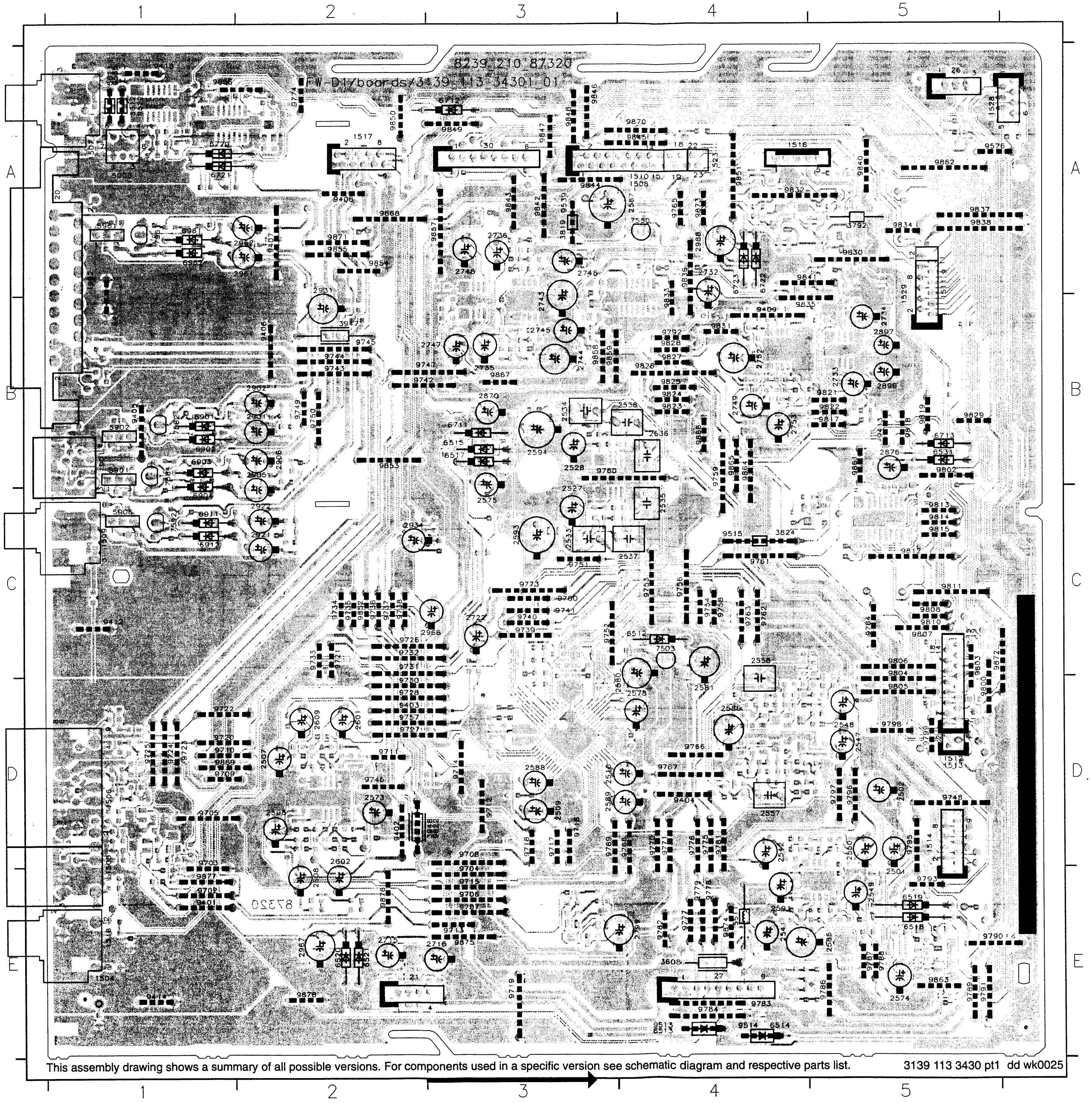


This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.

3139 113 3430 pt1 dd wk0025

1978	A4	2888	D5	3571	D2	3820	C2	4677	A2
2503	D1	2889	E5	3572	D1	3821	C1	4678	A4
2504	D1	2890	E5	3573	D2	3822	C1	4679	B3
2505	D5	2891	E5	3574	C1	3823	A2	4680	B3
2506	D5	2893	A5	3575	D2	3825	A4	4681	A3
2511	D2	2894	A5	3576	C1	3826	A4	4683	C3
2512	D2	2898	A5	3577	D2	3827	E5	4684	C2
2513	D3	2899	A4	3578	D2	3828	D5	4685	D2
2514	C3	2903	B5	3579	D2	3829	E5	4688	E2
2515	D3	2904	B5	3580	C2	3833	A3	4689	E1
2516	C3	2907	B5	3581	D3	3835	A5	4690	E1
2519	D3	2908	B5	3582	C2	3836	A5	4691	B4
2520	C3	2923	C5	3583	D3	3851	B4	4692	E1
2521	D3	2924	C5	3584	C2	3852	B4	4693	B3
2522	D3	2925	B5	3585	C2	3857	C4	4694	E1
2523	C2	2926	B5	3586	C3	3901	B4	4695	E1
2524	B2	2927	B5	3588	B3	3902	B5	4696	D1
2525	C2	2929	B5	3589	C3	3903	B5	4697	D1
2526	B3	2930	C5	3592	B3	3904	B5	4698	C1
2529	C3	2932	B4	3593	D4	3905	B5	4700	D1
2530	B3	2933	C5	3594	D4	3906	B5	4704	C1
2531	E1	2935	C5	3595	D1	3907	B5	4705	C1
2532	D1	2963	A5	3596	E1	3908	B4	4706	B1
2539	C3	2964	A5	3597	D2	3909	B5	4707	C1
2540	C3	2965	A5	3599	E1	3910	B5	4708	C1
2543	E2	2968	C4	3600	E1	3911	C5	4709	B2
2544	E2	2969	C4	3605	A1	3912	B5	4713	B1
2545	E2	2970	C4	3606	A1	3913	B5	4714	A2
2546	D1	2972	D1	3607	D2	3914	B5	4715	A5
2551	E1	2973	B4	3609	D5	3936	C4	4716	D3
2552	E1	2974	B4	3610	D5	3937	C5	4717	B1
2553	E2	2976	A4	3611	D5	3938	C5	4718	B4
2554	E2	2977	A4	3612	D5	3939	C5	4720	E1
2555	D2	2978	B4	3613	D4	3940	C5	4721	E1
2556	D2	2979	A5	3614	D4	3941	C5	4724	A2
2559	D2	2980	B5	3615	D4	3942	C5	4725	A2
2560	C1	2981	B5	3616	D4	3945	B5	4726	A2
2561	D1	2983	E4	3617	D4	3946	B5	4727	B2
2562	D1	2984	E3	3618	D4	3949	E3	4901	A4
2563	D2	2985	D5	3619	D4	3950	C4	4902	C5
2564	D2	2986	D5	3620	D4	3951	C4	4903	A4
2565	D2	2987	D5	3621	D4	3952	A5	4904	C4
2566	D2	3501	E1	3622	D5	3953	A5	4906	C5
2567	D2	3502	D1	3623	D4	3954	A2	4907	B5
2568	D2	3503	E1	3624	D4	3955	A1	4908	C5
2569	D2	3504	D1	3625	D4	3956	A2	4911	E1
2570	D2	3505	D5	3626	D4	3957	A1	4912	D5
2571	D1	3506	D5	3627	D5	3958	C3	4913	A5
2572	D1	3507	D5	3630	D4	3959	C3	4914	A4
2576	D3	3508	D5	3631	D4	3960	B2	4962	A5
2577	D2	3509	D3	3653	E1	3961	A5	4963	B4
2579	C2	3510	C3	3711	E4	3962	A5	4964	B4
2582	C2	3511	C2	3712	E3	3963	A5	4965	E1
2583	D2	3512	B3	3713	E4	3964	A4	4966	B1
2584	C3	3513	C3	3714	E4	3965	A5	4967	B2
2590	D3	3514	B3	3715	D5	3966	A5	5512	A1
2592	E2	3515	C3	3716	D5	3967	A5	5962	A4
2596	A1	3516	B3	3717	D5	3970	A1	5963	C4
2597	A1	3517	C2	3718	D5	3971	A2	5964	B4
2598	E1	3518	B2	3720	B2	3972	A3	5965	B4
2603	D4	3519	C2	3724	B2	3973	A3	7501	D3
2604	D4	3520	B2	3726	B2	3974	B3	7502	B3
2605	D4	3521	C3	3728	B2	3975	A3	7504	B3
2606	D4	3522	B3	3731	B1	3978	C3	7505	D2
2607	D4	3523	C3	3732	A2	3979	C3	7506	D2
2612	D5	3524	B3	3733	B1	3980	C3	7507	D2
2613	D5	3525	C3	3734	B1	3981	A4	7508	D2
2614	D5	3526	B3	3735	B1	3982	A2	7509	E1
2615	E5	3527	C3	3736	B1	3983	E4	7510	E1
2616	E5	3528	C3	3737	B3	3984	E4	7511	E1
2617	E5	3529	E2	3738	A3	3985	A2	7514	E1
2618	D5	3530	D2	3741	B3	3986	A3	7515	C3
2619	D5	3531	E2	3742	A3	3987	B1	7516	B3
2625	D4	3532	D2	3743	B3	3988	B2	7517	D4
2626	D4	3533	E2	3744	A3	3989	B3	7521	D5
2678	E5	3534	D2	3745	B3	3990	B1	7522	D5
2717	D5	3535	E1	3746	A3	3991	B2	7529	D5
2718	D5	3536	D1	3747	B3	3992	B1	7534	A2
2719	D5	3537	E1	3748	B3	3993	C1	7536	B2
2720	D5	3538	D1	3749	B3	4401	A4	7537	B3
2721	D5	3539	E1	3750	A3	4402	B4	7538	A5
2723	A4	3540	D1	3751	B3	4403	A1	7539	A4
2724	B2	3541	E1	3752	A3	4404	A1	7540	A5
2726	B2	3542	E1	3753	B3	4405	A1	7542	A5
2728	B2	3543	E1	3754	A3	4406	A1	7544	E3
2729	A2	3544	E1	3755	B2	4407	A1	7546	A1
2737	B3	3545	E1	3756	B2	4409	B2	7547	A1
2738	A3	3546	E1	3757	B2	4410	C3	7548	A1
2739	B3	3547	E2	3758	B2	4411	D4	7549	C1
2740	A3	3548	E2	3759	B2	4412	D3	7551	C1
2741	B3	3549	E1	3760	B2	4413	B3	7555	A2
2742	A3	3550	E1	3761	B2	4511	D4	7556	A2
2750	B2	3551	E1	3764	E3	4512	D4	7557	A2
2751	B2	3552	E1	3765	E3	4516	E1	7581	B5
2754	B2	3553	D2	3766	E3	4578	D4	7583	B5
2775	B4	3554	D2	3767	E3	4616	E1	7591	C5
2776	B4	3555	D2	3768	E4	4617	D4	7593	E3
2777	B4	3556	D2	3769	E4	4650	D5	7594	B1
2800	E3	3557	D2	3770	E4	4651	D5	7595	B3
2801	E3	3558	D2	3771	E4	4652	D4	7596	B3
2830	A2	3559	D2	3772	A5	4653	D3	7962	A5
2831	A1	3560	D2	3773	A5	4654	D3		
2832	A1	3561	D2	3774	A5	4655	D3		
2833	A1	3562	D2	3775	A5	4656	C4		
2835	A4	3563	D1	3790	A1	4659	C3		
2836	A5	3564	D1	3791	A1	4669	A3		
2838	A5	3565	D1	3793	A1	4670	A3		
2866	A1	3566	D1	3812	A1	4671	A3		
2867	A2	3567	D1	3813	A2	4672	A3		
2877	A4	3568	D1	3814	A2	4673	A4		
2878	A2	3569	D1	3815	A2	4675	B4		
2887	E5	3570	D1	3816	B3	4676	B3		

AV BOARD - COMPONENT LAYOUT



This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.

3139 113 3430 pt1 dd wk0025

21	E2
26	A5
27	E4
30	A3
1504	E1
1505	D1
1506	D1
1507	A1
1508	A4
1509	C1
1510	A4
1511	A5
1512	D5
1513	D5
1514	D5
1516	A4
1517	A2
1518	E1
1523	A4
1528	A5
1529	B5
1901	B1
1902	A1
2501	E5
2502	D5
2507	D2
2508	D2
2509	D3
2510	D3
2527	C3
2528	B3
2533	C3
2534	B3
2535	C4
2536	B4
2537	C4
2538	B4
2541	E4
2542	D4
2547	D5
2548	D5
2549	E5
2550	D5
2557	D4
2558	C4
2573	D2
2574	E5
2575	C3
2578	D4
2580	D4
2581	D4
2585	E5
2586	D4
2587	A4
2588	D3
2589	D3
2591	E4
2593	C3
2594	B3
2601	D2
2602	D2
2608	E2
2609	D2
2715	E2
2716	E3
2722	C3
2732	A4
2733	B5
2734	B5
2735	B3
2736	A3
2743	B3
2744	B3
2745	B3
2746	A3
2747	B3
2748	A3
2749	B4
2752	B4
2753	B4
2799	E4
2870	B3
2876	B5
2896	B5
2897	B5
2901	B2
2902	B2
2905	B2
2906	B2
2921	C2
2922	C2
2931	A2
2934	C2
2961	A2
2962	A2
2966	C3
2967	E2
2988	A4
3608	E4
3792	A5
3819	A3
3824	C4
3947	B2
3948	D3
5000	A1
5511	E4
5611	A1
5612	A1
5901	B1
5902	B1
5906	C1
5961	A1
6512	C4
6513	E4
6514	E4
6515	B3
6517	B3
6518	E5
6519	E5
6520	E2
6521	E2
6531	B5
6711	B3
6712	A3
6713	B5
6720	A1
6721	A1
6722	A4
6723	A4
6901	B1
6902	B1
6903	B1
6904	C1
6911	C1
6912	C1
6961	A1
6962	A1
7503	C4
7550	A4
7582	B1
7584	B1
7592	C1
7961	A1
9401	E1
9402	D2
9403	D2
9404	D4
9405	B1
9406	B2
9407	A2
9408	A2
9409	B4
9410	A1
9411	B1
9412	C1
9413	B5
9414	E1
9513	E4
9514	E4
9515	C4
9522	A1
9535	A1
9539	A3
9576	A5
9622	D3
9702	E1
9703	D1
9704	E3
9705	D1
9706	E3
9707	E3
9708	D3
9709	D1
9710	D1
9711	D2
9712	D3
9713	E3
9714	D3
9715	E3
9716	D3
9717	D3
9718	D3
9719	E3
9720	D1
9721	C2
9722	D1
9723	D1
9724	D1
9725	D1
9726	C2
9727	D2
9728	D2
9730	D2
9731	C2
9732	C2
9733	C2
9734	C2
9735	C2
9736	C2
9737	C2
9738	C2
9739	C3
9740	C3
9741	C3
9742	B2
9743	B2
9744	B2
9745	B2
9746	D2
9747	B3
9748	D5
9749	B2
9750	B2
9751	C3
9752	C3
9753	C4
9754	C4
9756	C4
9757	D2
9758	C4
9759	B4
9760	B3
9761	C4
9762	C4
9763	C4
9764	C5
9765	A4
9766	D4
9767	D4
9768	D4
9769	D3
9770	D4
9771	D4
9773	C3
9774	A2
9775	D4
9776	D4
9777	E4
9778	E4
9779	E4
9780	C3
9781	D4
9782	E4
9783	E4
9784	E4
9786	E5
9787	E5
9788	E5
9789	E5
9790	E5
9791	E5
9792	B4
9793	E5
9795	D5
9796	D5
9797	D5
9798	D5
9799	D5
9800	D5
9802	B5
9803	C5
9804	C5
9805	D5
9806	C5
9807	C5
9808	C5
9810	C5
9811	C5
9812	C5
9813	C5
9814	C5
9815	C5
9817	B5
9818	B5
9819	B5
9821	B5
9822	B5
9823	B4
9824	B4
9825	B4
9826	B4
9827	B4
9828	B4
9829	B5
9830	A5
9831	B4
9832	A4
9833	B4
9834	A5
9835	B4
9836	A4
9837	A5
9838	A5
9840	A5
9841	A5
9842	A3
9843	A3
9844	A3
9845	A4
9846	A3
9847	A3
9848	A3
9849	A3
9850	A2
9851	A4
9852	C2
9853	B2
9854	A2
9855	A2
9856	A1
9857	A3
9858	B3
9859	B3
9861	B5
9862	A5
9863	E5
9864	B4
9865	B4
9866	B4
9867	B3
9868	A2
9869	D1
9870	A4
9871	A2
9872	C5
9873	A4
9874	E4
9875	E3
9876	E2
9877	E1
9878	E2

AV BOARD - CIRCUIT DIAGRAM (PART 1)

21 E2
27 F21
1504 F1
1505-B H2
1505-C C2
1506-A I2
1506-B B2
1528 D21
2501 E4
2502 F4
2503 E5
2504 G5
2505 D4
2506 E4
2507 D7
2508 G7
2509 D8
2510 G8
2511 C8
2512 G8
2513 D8
2514 G8
2515 D8
2516 G8
2519 D9
2520 G9
2521 D9
2522 G9
2523 C9
2524 G9
2525 B9
2526 I8
2527 B9
2528 I8
2529 B10
2530 H8
2531 C17
2532 E17
2533 B10
2534 H9
2535 B10
2536 I9
2537 B11
2538 H9
2539 C13
2540 G13
2541 B16
2542 F16
2543 B17
2544 F17
2545 B17
2546 E17
2547 C16
2548 E16
2549 B18
2550 E18
2551 D19
2552 D19
2553 F19
2554 G19
2555 E13
2556 E13
2557 D14
2558 F14
2559 D14
2560 F14
2561 D15
2562 F15
2563 C14
2564 E14
2565 C14
2566 F14
2567 B15
2568 E15
2569 C15
2570 F15
2571 C15
2572 F15
2573 J13
2574 C19
2575 H15
2576 F11
2577 F12
2578 G12
2579 G10
2580 H10
2581 H11
2582 H11
2583 D11
2584 D10
2585 J14
2586 J15
2587 J11
2588 E6
2589 F6
2590 E6
2591 F18
2592 F18
2593 C10
2594 H10
2596 E20
2597 E21
2598 B19
2601 C7
2602 H7
2603 C7
2604 I7
2605 B6
2606 H6
2607 I6
2608 I5
2609 C5
2612 H3
2613 H3
2614 H4
2615 G4
2616 H1
2617 H4
2618 D1
2619 D1
2625 C7
2626 I7
2678 F1
2715 E3
2716 F3
2717 B3
2718 C3
2719 B4
2720 C4
2721 B2
2934 F5
2966 E6
2967 C20
2983 E3
2984 F3
2985 D4
2986 F4
2987 J17
3501 E4
3502 F4
3503 E4
3504 G4
3505 D4
3506 F4
3507 E4
3508 F4
3509 C8
3510 G8
3511 B9
3512 I8
3513 B10
3514 I8
3515 A10
3516 H9
3517 B10
3518 I9
3519 B11
3520 I9
3521 C9
3522 H9
3523 C10
3524 H10
3525 A11
3526 J9
3527 C13
3528 G13
3529 B17
3530 E17
3531 B17
3532 F17
3533 C17
3534 E17
3535 C17
3536 E17
3537 C17
3538 E17
3539 B18
3540 E18
3541 B19
3542 E19
3543 D18
3544 D18
3545 F19
3546 G19
3547 F19
3548 G19
3549 F16
3550 F16
3551 F16
3552 F16
3553 C14
3554 E14
3555 C14
3556 F14
3557 B14
3558 E14
3559 C14
3560 F14
3561 C15
3562 E15
3563 D15
3564 F15
3565 C15
3566 F15
3567 C15
3568 E15
3569 C15
3570 E15
3571 D15
3572 F15
3573 D14
3574 F14
3575 E14
3576 G14
3577 E13
3578 E13
3579 E13
3580 F13
3581 E11
3582 E12
3583 E12
3584 E12
3585 G11
3586 H15
3588 G14
3589 H14
3592 H13
3593 I13
3594 J13
3595 I13
3596 J13
3597 J15
3599 C19
3600 B19
3605 E20
3606 E20
3607 C11
3608 F17
3609 H3
3610 H3
3611 H4
3612 H4
3613 C7
3614 H7
3615 C6
3616 I7
3617 B6
3618 H6
3619 B7
3620 H7
3621 I6
3622 H5
3623 C6
3624 I6
3625 B7
3626 J7
3627 H5
3630 J7
3631 B7
3653 J16
3711 E2
3712 F2
3713 E3
3714 F3
3715 B3
3716 C3
3717 B4
3718 C4
3950 F5
3951 E5
3958 D5
3959 F5
3983 B21
3984 C20
4511 C7
4512 G7
4516 J16
4578 H6
4616 F19
4617 I6
4911 F19
4912 J17
5511 F17
5512 E20
6512 H11
6513 J11
6514 J11
6515 G14
6517 H14
6518 G15
6519 G15
6520 B20
6521 B20
7501 D6
7502-A B10
7502-B H8
7503 G11
7504 G13
7505 C14
7506 F14
7507 D15
7508 F15
7509 C18
7510 D18
7511 B19
7514-A C17
7514-B E17
7515 A10
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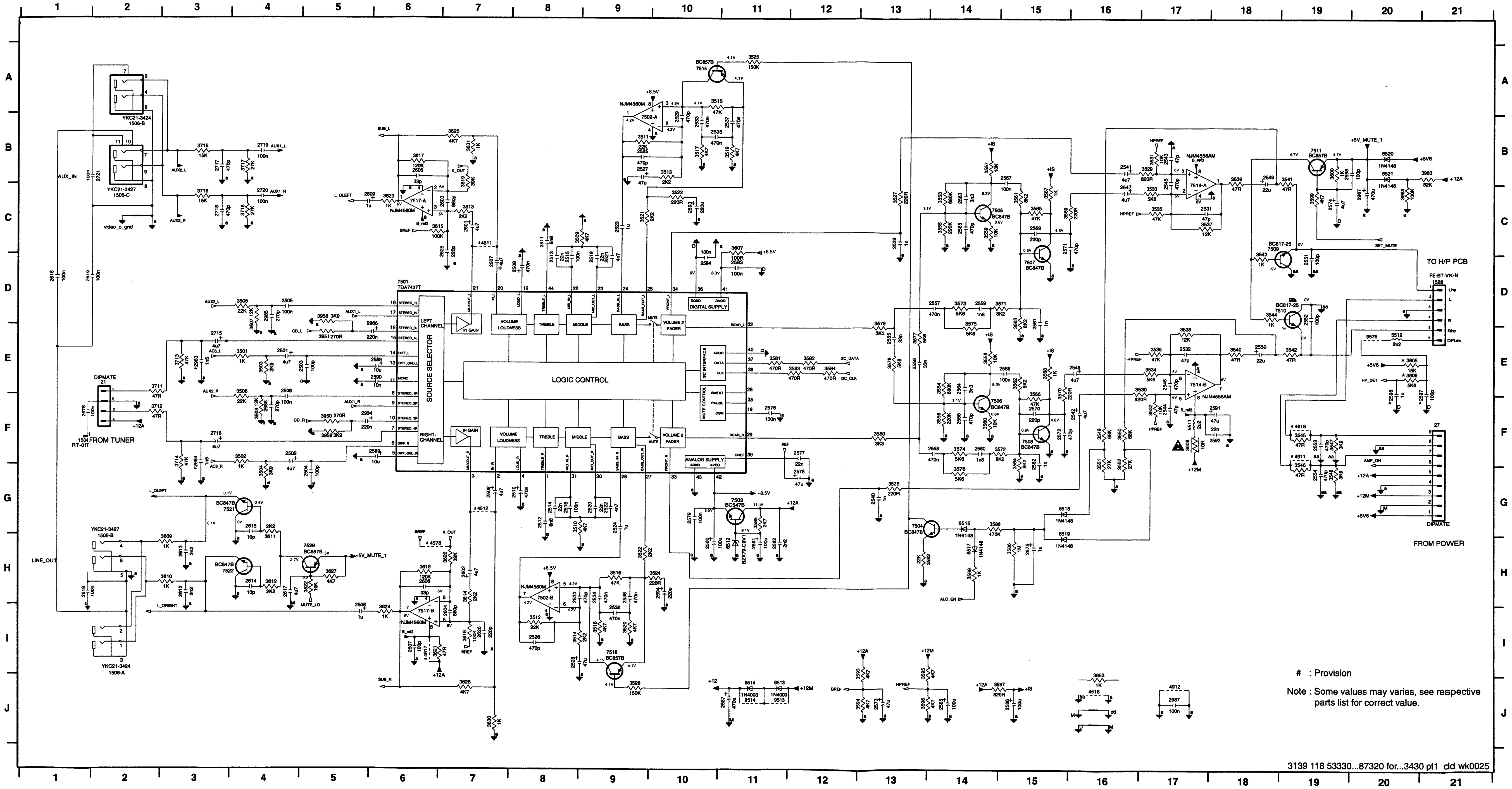
7522 H4
7529 H5
9513 J11
9514 J11
9576 E20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16
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18
19
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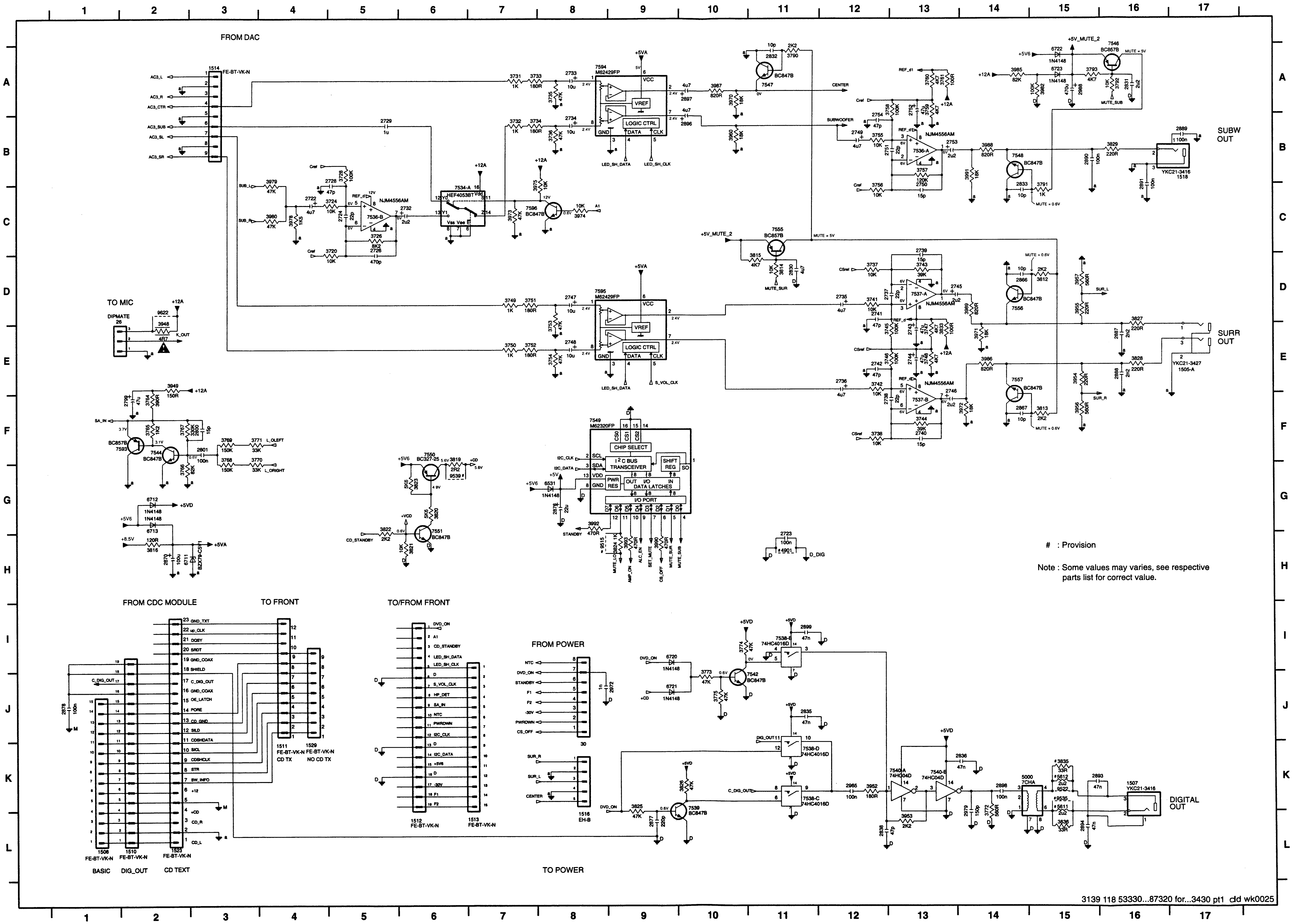
21
A
B
C
D
E
F
G
H
I
J
YKC21-3424
1506-B
YKC21-3427
1505-C
AUX_IN
video_o_gnd
AUX2_L
AUX2_R
AUX1_L
AUX1_R
DIPMATE
21
RT-01T
FROM TUNER
YKC21-3427
1505-B
LINE_OUT
YKC21-3424
1506-A
L_OLEFT
L_ORIGHT
BC847B
7521
BC847B
7522
7529
BC857B
+5V_MUTE_1
MUTE_LO
SUB_L
SUB_R
NJM4560M
7517-A
7517-B
BREF
K_OUT
7501
TDA7437T
SOURCE SELECTOR
LEFT CHANNEL
RIGHT CHANNEL
IN GAIN
VOLUME LOUDNESS
TREBLE
MIDDLE
BASS
VOLUME 2 FADER
DIGITAL SUPPLY
I2C INTERFACE
ADDR
DATA
CLK
MUTE CONTROL
SMEXT
PAUSE
CSM
LOGIC CONTROL
ANALOG SUPPLY
REAR_L
REAR_R
I2C_DATA
I2C_CLK
BC857B
7515
NJM4560M
7502-A
7502-B
7516
BC857B
7503
BC547B
BZX79-C9V1
7504
BC847B
ALC_EN
7505
BC847B
7506
BC847B
7507
BC847B
7508
BC847B
HPREF
NJM4556AM
7514-A
7514-B
7511
BC857B
7509
BC817-25
7510
BC817-25
SET_MUTE
TO H/P PCB
FE-BT-VK-N
1528
LHp
L
R
RHp
DPLsw
HP_DET
AMP_ON
27
DIPMATE
FROM POWER
+5V6
+12A
+12M
+8.5V
+IS
1N4148
1N4003
3139 118 53330...87320 for...3430 pt1 dd wk0025

: Provision

Note : Some values may varies, see respective parts list for correct value.

AV BOARD - CIRCUIT DIAGRAM (PART 2)


FROM DAC
1514 FE-BT-VK-N
AC3_L
AC3_R
AC3_CTR
AC3_SUB
AC3_SL
AC3_SR
7594 M62429FP
7595 M62429FP
VREF
LOGIC CTRL
DATA
CLK
LED_SH_DATA
LED_SH_CLK
S_VOL_CLK
7534-A HEF4053BT
7536-B NJM4556AM
7536-A NJM4556AM
7537-A NJM4556AM
7537-B NJM4556AM
CENTER
SUBWOOFER
SUBW OUT
YKC21-3416 1518
SURR OUT
YKC21-3427 1505-A
SUR_L
SUR_R
+5V_MUTE_2
MUTE = 5V
MUTE = 0.6V
MUTE_SUB
MUTE_SUR
TO MIC
DIPMATE 26
K_OUT
SA_IN
L_OLEFT
L_ORIGHT
7549 M62320FP
CHIP SELECT
I²C BUS TRANSCEIVER
SHIFT REG
PWR RES
OUT I/O DATA LATCHES
I/O PORT
I2C_CLK
I2C_DATA
STANDBY
CD_STANDBY
FROM CDC MODULE
TO FRONT
TO/FROM FRONT
FROM POWER
TO POWER
1508 FE-BT-VK-N BASIC
1510 FE-BT-VK-N DIG_OUT
1523 FE-BT-VK-N CD TEXT
1511 FE-BT-VK-N CD TX
1529 FE-BT-VK-N NO CD TX
1512 FE-BT-VK-N
1513 FE-BT-VK-N
1516 EH-B
7538-B 74HC4016D
7538-C 74HC4016D
7538-D 74HC4016D
7540-A 74HC04D
7540-B 74HC04D
5000 7CHA
1507 YKC21-3416
DIGITAL OUT
DVD_ON
DIG_OUT
C_DIG_OUT

: Provision

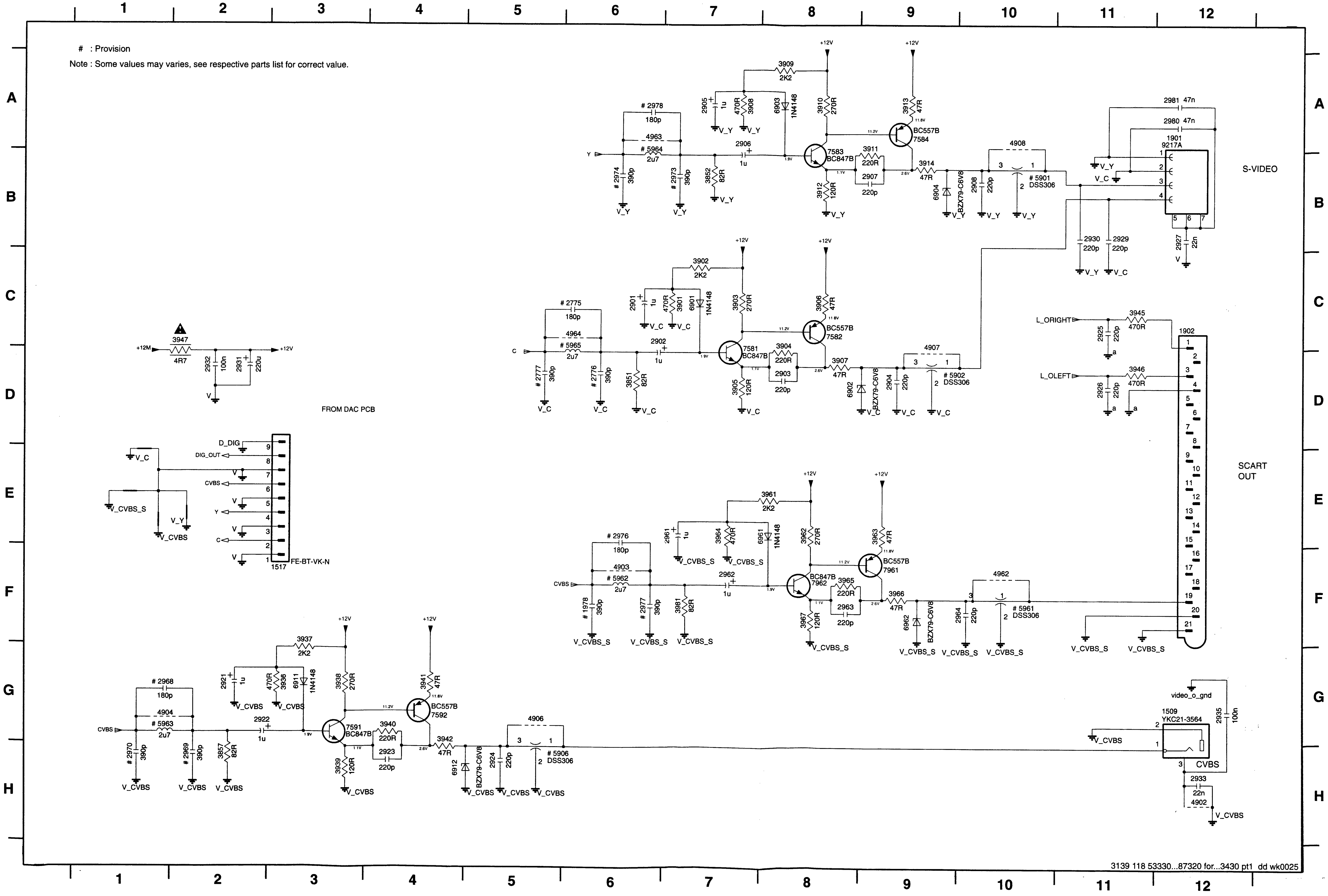
Note : Some values may varies, see respective parts list for correct value.

3139 118 53330...87320 for...3430 pt1 dd wk0025

26	D2
30	K8
1505-A	E17
1507	K16
1508	L1
1510	L2
1511	K4
1512	L6
1513	L6
1514	A3
1516	L8
1518	B17
1523	L2
1529	K4
2722	C4
2723	H11
2724	C5
2726	C5
2728	B5
2729	B5
2732	C6
2733	A8
2734	B8
2735	D12
2736	E12
2737	D12
2738	F12
2739	C13
2740	F13
2741	D12
2742	E12
2743	E13
2744	E13
2745	D13
2746	E13
2747	D8
2748	E8
2749	B12
2750	C13
2751	B12
2752	A13
2753	B13
2754	B12
2799	F2
2800	F3
2801	F3
2830	D11
2831	A16
2832	A11
2833	C14
2835	J11
2836	K14
2838	L12
2866	D14
2867	F14
2870	H2
2876	G8
2877	L9
2878	J1
2887	E16
2888	E16
2889	B17
2890	B15
2891	C16
2893	K15
2894	L15
2896	B10
2897	A10
2898	K14
2899	I11
2965	K12
2972	J9
2979	L14
2988	A15
3720	C5
3724	C5
3726	C5
3728	B5
3731	A7
3732	B7
3733	A7
3734	B7
3735	A8
3736	B8
3737	D12
3738	F12
3741	D12
3742	E12
3743	D13
3744	F13
3745	E13
3746	E13
3747	E13
3748	E13
3749	D7
3750	E7
3751	D7
3752	E7
3753	E8
3754	E8
3755	B12
3756	C12
3757	B13
3758	A13
3759	A13
3760	A13
3761	A13
3764	F2
3765	F2
3766	G2
3767	F2
3768	F3
3769	F3
3770	F3
3771	F3
3772	L14
3773	J10
3774	I10
3775	J10
3790	A11
3791	C15
3792	A16
3793	A15
3812	D15
3813	F15
3814	D11
3815	D11
3816	H2
3819	F6
3820	G6
3821	H6
3822	G5
3823	G6
3824	H9
3825	K9
3826	K10
3827	D16
3828	E16
3829	B16
3833	E13
3835	K15
3836	L15
3948	E2
3949	E2
3952	K12
3953	L13
3954	E15
3955	D15
3956	F15
3957	D15
3960	B10
3970	A10
3971	E14
3972	F14
3973	C7
3974	C8
3975	C8
3978	C4
3979	B4
3980	C4
3982	A15
3985	A14
3986	E14
3987	A10
3988	B14
3989	D14
3990	H9
3991	B14
3992	G8
3993	H9
4901	H11
5000	K14
5611	K15
5612	K15
6531	G8
6711	H2
6712	G2
6713	G2
6720	I9
6721	J9
6722	A15
6723	A15
7534-A	C6
7536-A	B13
7536-B	C5
7537-A	D13
7537-B	F13
7538-B	I11
7538-C	K11
7538-D	K11
7539	K10
7540-A	K13
7540-B	K13
7542	J10
7544	F2
7546	A16
7547	A11
7548	B14
7549	F8
7550	F6
7551	G6
7555	C11
7556	D14
7557	E14
7593	F2
7594	A8
7595	D8
7596	C8
9515	H8
9522	K15
9535	K15
9539	G6
9622	D2

AV BOARD - CIRCUIT DIAGRAM (PART 3)

1509	G12
1517	F3
1901	A12
1902	C12
1978	F6
2775	C6
2776	D6
2777	D5
2901	C6
2902	C6
2903	D8
2904	D9
2905	A7
2906	A7
2907	B9
2908	B10
2921	G2
2922	G2
2923	H4
2924	H5
2925	C11
2926	D11
2927	B12
2929	B11
2930	B11
2931	D2
2932	D2
2933	H12
2935	G12
2961	E7
2962	F7
2963	F8
2964	F10
2968	G1
2969	H2
2970	H1
2973	B7
2974	B6
2976	E6
2977	F6
2978	A6
2980	A12
2981	A12
3851	D6
3852	B7
3857	H2
3901	C7
3902	C7
3903	C7
3904	C8
3905	D7
3906	C8
3907	D8
3908	A7
3909	A8
3910	A8
3911	A9
3912	B8
3913	A9
3914	B9
3936	G3
3937	F3
3938	G3
3939	H3
3940	G4
3941	G4
3942	G4
3945	C11
3946	D11
3947	C2
3961	E8
3962	E8
3963	E9
3964	E7
3965	F8
3966	F9
3967	F8
3981	F7
4902	H12
4903	F6
4904	G1
4906	G5
4907	D9
4908	A10
4962	F10
4963	A6
4964	C6
5901	B10
5902	D9
5906	H5
5961	F10
5962	F6
5963	G1
5964	A6
5965	C6
6901	C7
6902	D8
6903	A8
6904	B9
6911	G3
6912	H4
6961	E8
6962	F9
7581	D7
7582	C8
7583	B8
7584	A9
7591	G3
7592	G4
7961	F9
7962	F8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11
12
A
B
C
D
E
F
G
H
# : Provision
Note : Some values may varies, see respective parts list for correct value.
+12V
3909
2K2
2905
1u
470R
3908
6903
1N4148
3910
270R
3913
47R
BC557B
7584
# 2978
180p
4963
# 5964
2u7
Y
2906
1u
7583
BC847B
3911
220R
2907
220p
3914
47R
4908
# 5901
DSS306
6904
BZX79-C6V8
2908
220p
# 2974
390p
# 2973
390p
3852
82R
3912
120R
V_Y
2981 47n
2980 47n
1901
9217A
V_C
S-VIDEO
2930
220p
2929
220p
2927
22n
3902
2K2
2901
1u
3901
6901
1N4148
3903
270R
3906
47R
BC557B
7582
# 2775
180p
4964
# 5965
2u7
C
2902
1u
7581
BC847B
3904
220R
2903
220p
3907
47R
4907
# 5902
DSS306
6902
BZX79-C6V8
2904
220p
# 2777
390p
# 2776
390p
3851
82R
3905
120R
L_ORIGHT
2925
220p
3945
470R
L_OLEFT
2926
220p
3946
470R
1902
SCART OUT
3947
4R7
+12M
2932
100n
2931
220u
FROM DAC PCB
D_DIG
DIG_OUT
CVBS
V
V_CVBS_S
V_CVBS
1517
FE-BT-VK-N
3961
2K2
2961
1u
3964
470R
6961
1N4148
3962
270R
3963
47R
BC557B
7961
# 2976
180p
4903
# 5962
2u7
2962
1u
BC847B
7962
3965
220R
2963
220p
3966
47R
4962
# 5961
DSS306
6962
BZX79-C6V8
2964
220p
# 1978
390p
# 2977
390p
3981
82R
3967
120R
3937
2K2
2921
1u
3936
6911
1N4148
3938
270R
3941
47R
BC557B
7592
# 2968
180p
4904
# 5963
2u7
2922
1u
7591
BC847B
3940
220R
2923
220p
3942
47R
4906
# 5906
DSS306
6912
BZX79-C6V8
2924
220p
# 2970
390p
# 2969
390p
3857
82R
3939
120R
video_o_gnd
1509
YKC21-3564
2935
100n
2933
22n
4902
3139 118 53330...87320 for...3430 pt1 dd wk0025

MISCELLANEOUS

1505	4822 267 31449	Cinch Socket - Aux-in/Line-out/ Surround Out
1507	4822 267 31729	Cinch Socket - Audio Digital Out
1509	4822 267 31996	Cinch Socket - Video Out (CVBS)
1510	4822 265 11553	Flex Connector 19P
1511	4822 267 10732	Flex Connector 12P
1512	4822 265 11553	Flex Connector 19P
1514	2422 025 14518	Flex Connector 9P
1517	2422 025 14518	Flex Connector 9P
1518	4822 267 31729	Cinch Socket - Sub-Woofer Out
1523	4822 267 10757	Flex Connector 23P
1528	4822 267 10731	Flex Connector 6P
1529	4822 265 11515	Flex Connector 8P
1901	4822 267 10994	S-Video Out Socket
1902	2422 025 12352	Scart Connector

CAPACITORS

2501	4822 124 40769	4,7µF 20% 100V
2502	4822 124 40769	4,7µF 20% 100V
2503	5322 122 32531	100pF 5% 50V
2504	5322 122 32531	100pF 5% 50V
2505	4822 126 14585	100nF 10% 50V
2506	4822 126 14585	100nF 10% 50V
2507	4822 124 40769	4,7µF 20% 100V
2508	4822 124 40769	4,7µF 20% 100V
2509	4822 124 41407	0,47µF 20% 63V
2510	4822 124 41407	0,47µF 20% 63V
2511	5322 122 31866	6,8nF 10% 63V
2512	5322 122 31866	6,8nF 10% 63V
2513	5322 122 32654	22nF 10% 63V
2514	5322 122 32654	22nF 10% 63V
2515	4822 126 13838	100nF +80/-20% 50V
2516	4822 126 13838	100nF +80/-20% 50V
2519	5322 122 32654	22nF 10% 63V
2520	5322 122 32654	22nF 10% 63V
2521	5322 126 10223	4,7nF 10% 63V
2522	5322 126 10223	4,7nF 10% 63V
2523	4822 126 14043	1µF +80/-20% 16V
2524	4822 126 14043	1µF +80/-20% 16V
2525	5322 122 32268	470pF 10% 50V
2526	5322 122 32268	470pF 10% 50V
2527	4822 124 40433	47µF 20% 25V
2528	4822 124 40433	47µF 20% 25V
2529	5322 122 34099	470pF 10% 63V
2530	5322 122 34099	470pF 10% 63V
2531	4822 126 13692	47pF 1% 63V
2532	4822 126 13692	47pF 1% 63V
2533	4822 121 51252	470nF 5% 63V
2534	4822 121 51252	470nF 5% 63V
2535	4822 121 51252	470nF 5% 63V
2536	4822 121 51252	470nF 5% 63V
2537	4822 121 51252	470nF 5% 63V
2538	4822 121 51252	470nF 5% 63V
2539	5322 122 31647	1nF 10% 63V
2540	5322 122 31647	1nF 10% 63V
2541	4822 124 40769	4,7µF 20% 100V
2542	4822 124 40769	4,7µF 20% 100V
2543	4822 126 13692	47pF 1% 63V
2544	4822 126 13692	47pF 1% 63V
2545	5322 122 34099	470pF 10% 63V
2546	5322 122 34099	470pF 10% 63V
2547	4822 124 40769	4,7µF 20% 100V
2548	4822 124 40769	4,7µF 20% 100V
2549	4822 124 81151	22µF 50V
2550	4822 124 81151	22µF 50V
2551	5322 122 32531	100pF 5% 50V
2552	5322 122 32531	100pF 5% 50V
2553	5322 122 34099	470pF 10% 63V
2554	5322 122 34099	470pF 10% 63V
2555	4822 126 12105	33nF 5% 50V
2556	4822 126 12105	33nF 5% 50V
2557	4822 121 51252	470nF 5% 63V
2558	4822 121 51252	470nF 5% 63V
2559	4822 126 10847	1,8nF 10% 63V
2560	4822 126 10847	1,8nF 10% 63V
2561	5322 122 31647	1nF 10% 63V
2562	5322 122 31647	1nF 10% 63V
2563	4822 122 33891	3,3nF 10% 63V
2564	4822 122 33891	3,3nF 10% 63V
2565	5322 122 34099	470pF 10% 63V
2566	5322 122 34099	470pF 10% 63V
2567	4822 126 14585	100nF 10% 50V
2568	4822 126 14585	100nF 10% 50V
2569	4822 122 33575	220pF 5% 63V
2570	4822 122 33575	220pF 5% 63V
2571	5322 122 34099	470pF 10% 63V
2572	5322 122 34099	470pF 10% 63V
2573	4822 124 40433	47µF 20% 25V
2574	4822 124 40769	4,7µF 20% 100V
2575	4822 124 21913	1µF 20% 63V
2576	4822 126 14585	100nF 10% 50V
2577	5322 122 32654	22nF 10% 63V
2578	4822 124 40433	47µF 20% 25V
2579	4822 126 14585	100nF 10% 50V
2580	4822 124 40207	100µF 20% 25V
2581	4822 124 40207	100µF 20% 25V
2582	4822 122 33127	2,2nF 10% 63V
2583	4822 126 13838	100nF +80/-20% 50V
2584	4822 126 14585	100nF 10% 50V
2585	4822 124 40207	100µF 20% 25V
2586	4822 124 40207	100µF 20% 25V
2587	4822 124 80791	470µF 20% 16V
2588	4822 124 40248	10µF 20% 63V
2589	4822 124 40248	10µF 20% 63V
2590	5322 122 34098	10nF 10% 63V
2591	4822 124 40433	47µF 20% 25V
2592	5322 122 32654	22nF 10% 63V
2593	4822 124 80144	220µF 20% 25V
2594	4822 124 80144	220µF 20% 25V
2596	4822 126 14043	1µF +80/-20% 16V
2597	5322 122 32531	100pF 5% 50V
2598	5322 122 32531	100pF 5% 50V
2601	4822 124 40769	4,7µF 20% 100V
2602	4822 124 40769	4,7µF 20% 100V
2603	4822 122 32535	680pF 10% 63V
2604	4822 122 32535	680pF 10% 63V
2605	5322 122 32659	33pF 5% 50V
2606	5322 122 32659	33pF 5% 50V
2607	5322 122 32531	100pF 5% 50V
2608	4822 124 21913	1µF 20% 63V
2609	4822 124 21913	1µF 20% 63V
2612	4822 122 33127	2,2nF 10% 63V
2613	4822 122 33127	2,2nF 10% 63V
2614	5322 122 32448	10pF 5% 63V
2615	5322 122 32448	10pF 5% 63V
2616	4822 126 14585	100nF 10% 50V
2617	2020 552 96305	4,7µF +80/-20% 10V
2618	4822 126 13838	100nF +80/-20% 50V
2619	4822 126 13838	100nF +80/-20% 50V
2625	4822 122 33575	220pF 5% 63V
2626	4822 122 33575	220pF 5% 63V
2678	4822 126 14585	100nF 10% 50V
2715	4822 124 40769	4,7µF 20% 100V
2716	4822 124 40769	4,7µF 20% 100V
2717	5322 122 34099	470pF 10% 63V
2718	5322 122 34099	470pF 10% 63V
2719	4822 126 13838	100nF +80/-20% 50V
2720	4822 126 13838	100nF +80/-20% 50V
2721	4822 126 13838	100nF +80/-20% 50V
2722	4822 124 40769	4,7µF 20% 100V
2723	4822 126 13838	100nF +80/-20% 50V
2724	5322 122 32658	22pF 5% 50V
2726	5322 122 34099	470pF 10% 63V
2728	4822 126 13692	47pF 1% 63V
2729	4822 126 14043	1µF +80/-20% 16V
2732	4822 124 22652	2,2µF 20% 50V
2733	4822 124 40248	10µF 20% 63V
2734	4822 124 40248	10µF 20% 63V
2735	4822 124 40769	4,7µF 20% 100V
2736	4822 124 40769	4,7µF 20% 100V
2737	5322 122 32658	22pF 5% 50V
2738	5322 122 32658	22pF 5% 50V
2739	4822 126 13486	15pF 2% 63V
2740	4822 126 13486	15pF 2% 63V
2741	4822 126 13692	47pF 1% 63V
2742	4822 126 13692	47pF 1% 63V
2743	4822 124 41751	47µF 20% 50V
2744	4822 124 41751	47µF 20% 50V
2745	4822 124 22652	2,2µF 20% 50V
2746	4822 124 22652	2,2µF 20% 50V
2747	4822 124 40248	10µF 20% 63V
2748	4822 124 40248	10µF 20% 63V
2749	4822 124 40769	4,7µF 20% 100V
2750	4822 126 13486	15pF 2% 63V
2751	5322 122 32658	22pF 5% 50V
2752	4822 124 41751	47µF 20% 50V
2753	4822 124 22652	2,2µF 20% 50V
2754	4822 126 13692	47pF 1% 63V
2799	4822 124 41751	47µF 20% 50V
2800	4822 126 13486	15pF 2% 63V
2801	4822 126 14585	100nF 10% 50V
2830	2020 552 96305	4,7µF +80/-20% 10V
2831	2020 552 96305	4,7µF +80/-20% 10V
2832	5322 122 32448	10pF 5% 63V
2833	5322 122 32448	10pF 5% 63V
2835	4822 126 13751	47nF 10% 63V
2836	4822 126 13751	47nF 10% 63V
2838	4822 126 13692	47pF 1% 63V
2866	5322 122 32448	10pF 5% 63V
2867	5322 122 32448	10pF 5% 63V
2870	4822 124 41584	100µF 20% 10V
2876	4822 126 14585	100nF 10% 50V
2876	4822 124 81151	22µF 50V /22
2877	4822 122 33575	220pF 5% 63V
2878	4822 126 13838	100nF +80/-20% 50V
2887	4822 122 33127	2,2nF 10% 63V
2888	4822 122 33127	2,2nF 10% 63V
2889	4822 126 14585	100nF 10% 50V
2890	4822 126 14585	100nF 10% 50V
2891	4822 126 13838	100nF +80/-20% 50V
2893	4822 126 13751	47nF 10% 63V
2894	4822 126 13751	47nF 10% 63V
2896	4822 124 40769	4,7µF 20% 100V
2897	4822 124 40769	4,7µF 20% 100V
2898	4822 126 13838	100nF +80/-20% 50V
2899	4822 126 13751	47nF 10% 63V
2901	4822 124 21913	1µF 20% 63V
2902	4822 124 21913	1µF 20% 63V
2903	4822 122 33575	220pF 5% 63V
2904	4822 122 33575	220pF 5% 63V
2905	4822 124 21913	1µF 20% 63V
2906	4822 124 21913	1µF 20% 63V
2907	4822 122 33575	220pF 5% 63V
2908	4822 122 33575	220pF 5% 63V
2921	4822 124 21913	1µF 20% 63V
2922	4822 124 21913	1µF 20% 63V
2923	4822 122 33575	220pF 5% 63V
2924	4822 122 33575	220pF 5% 63V

CAPACITORS

2925	4822 122 33575	220pF 5% 63V
2926	4822 122 33575	220pF 5% 63V
2927	5322 122 32654	22nF 10% 63V
2929	4822 122 33575	220pF 5% 63V
2930	4822 122 33575	220pF 5% 63V
2931	4822 124 80144	220µF 20% 25V
2932	4822 126 13838	100nF +80/-20% 50V
2933	5322 122 32654	22nF 10% 63V
2934	4822 124 40746	0,22µF 20% 63V
2935	4822 126 13838	100nF +80/-20% 50V
2961	4822 124 21913	1µF 20% 63V
2962	4822 124 21913	1µF 20% 63V
2963	4822 122 33575	220pF 5% 63V
2964	4822 122 33575	220pF 5% 63V
2965	4822 126 13838	100nF +80/-20% 50V
2966	4822 124 40746	0,22µF 20% 63V
2967	4822 124 81044	470µF 20% 6,3V
2972	5322 126 10511	1nF 5% 50V
2979	5322 122 33538	150pF 2% 63V
2980	4822 126 13751	47nF 10% 63V
2981	4822 126 13751	47nF 10% 63V
2985	4822 122 33216	270pF 5% 50V
2986	4822 122 33216	270pF 5% 50V
2987	4822 126 13838	100nF +80/-20% 50V
2988	4822 124 81044	470µF 20% 6,3V

RESISTORS

3501	4822 051 10102	1k 2% 0,25W
3502	4822 051 10102	1k 2% 0,25W
3503	4822 051 20392	3k9 5% 0,1W
3504	4822 051 20392	3k9 5% 0,1W
3505	4822 051 20223	22k 5% 0,1W
3506	4822 051 20223	22k 5% 0,1W
3507	4822 117 11383	12k 1% 0,1W
3508	4822 117 11383	12k 1% 0,1W
3509	4822 051 20472	4k7 5% 0,1W
3510	4822 051 20472	4k7 5% 0,1W
3511	4822 051 20223	22k 5% 0,1W
3512	4822 051 20223	22k 5% 0,1W
3513	4822 117 11449	2k2 5% 0,1W
3514	4822 117 11449	2k2 5% 0,1W
3515	4822 117 10834	47k 1% 0,1W
3516	4822 117 10834	47k 1% 0,1W
3517	4822 051 20472	4k7 5% 0,1W
3518	4822 051 20472	4k7 5% 0,1W
3519	4822 051 20472	4k7 5% 0,1W
3520	4822 051 20472	4k7 5% 0,1W
3521	4822 117 11449	2k2 5% 0,1W
3522	4822 117 11449	2k2 5% 0,1W
3523	4822 117 11503	220R 1% 0,1W
3524	4822 117 11503	220R 1% 0,1W
3525	4822 051 20154	150k 5% 0,1W
3526	4822 051 20154	150k 5% 0,1W
3527	4822 117 11503	220R 1% 0,1W
3528	4822 117 11503	220R 1% 0,1W
3529	4822 117 11454	820R 1% 0,1W
3530	4822 117 11454	820R 1% 0,1W
3531	4822 117 10833	10k 1% 0,1W
3532	4822 117 10833	10k 1% 0,1W
3533	4822 051 20562	5k6 5% 0,1W
3534	4822 051 20562	5k6 5% 0,1W
3535	4822 117 10834	47k 1% 0,1W
3536	4822 117 10834	47k 1% 0,1W
3537	4822 117 11383	12k 1% 0,1W
3538	4822 117 11383	12k 1% 0,1W
3539	4822 051 20479	47R 5% 0,1W
3540	4822 051 20479	47R 5% 0,1W
3541	4822 051 20479	47R 5% 0,1W
3542	4822 051 20479	47R 5% 0,1W
3543	4822 051 10102	1k 2% 0,25W
3544	4822 051 10102	1k 2% 0,25W
3545	4822 051 20479	47R 5% 0,1W
3546	4822 051 20479	47R 5% 0,1W
3547	4822 051 20392	3k9 5% 0,1W
3548	4822 051 20392	3k9 5% 0,1W
3549	4822 051 20683	68k 5% 0,1W
3550	4822 051 20683	68k 5% 0,1W
3551	4822 051 20273	27k 5% 0,1W
3552	4822 051 20273	27k 5% 0,1W
3553	4822 051 20684	680k 5% 0,1W
3554	4822 051 20684	680k 5% 0,1W
3555	4822 117 13579	220k 1% 0,1W
3556	4822 117 13579	220k 1% 0,1W
3557	4822 117 10833	10k 1% 0,1W
3558	4822 117 10833	10k 1% 0,1W
3559	4822 117 10833	10k 1% 0,1W
3560	4822 117 10833	10k 1% 0,1W
3561	4822 051 20822	8k2 5% 0,1W
3562	4822 051 20822	8k2 5% 0,1W
3563	4822 051 20822	8k2 5% 0,1W
3564	4822 051 20822	8k2 5% 0,1W
3565	4822 117 10834	47k 1% 0,1W
3566	4822 117 10834	47k 1% 0,1W
3567	4822 051 10102	1k 2% 0,25W
3568	4822 051 10102	1k 2% 0,25W
3569	4822 117 11503	220R 1% 0,1W
3570	4822 117 11503	220R 1% 0,1W
3571	4822 051 20822	8k2 5% 0,1W
3572	4822 051 20822	8k2 5% 0,1W
3573	4822 051 20562	5k6 5% 0,1W
3574	4822 051 20562	5k6 5% 0,1W
3575	4822 051 20562	5k6 5% 0,1W
3576	4822 051 20562	5k6 5% 0,1W
3577	4822 051 20562	5k6 5% 0,1W

3578	4822 051 20562	5k6 5% 0,1W
3579	4822 051 20332	3k3 5% 0,1W
3580	4822 051 20332	3k3 5% 0,1W
3581	4822 051 20471	470R 5% 0,1W
3582	4822 051 20471	470R 5% 0,1W
3583	4822 051 20471	470R 5% 0,1W
3584	4822 051 20471	470R 5% 0,1W
3585	4822 117 12955	2k7 1% 0,1W
3586	4822 051 20105	1M 5% 0,1W
3588	4822 051 20474	470k 5% 0,1W
3589	4822 051 10102	1k 2% 0,25W
3592	4822 051 20223	22k 5% 0,1W
3593	4822 051 20472	4k7 5% 0,1W
3594	4822 051 20472	4k7 5% 0,1W
3595	4822 051 20472	4k7 5% 0,1W
3596	4822 051 20472	4k7 5% 0,1W
3597	4822 117 11454	820R 1% 0,1W
3599	4822 051 20472	4k7 5% 0,1W
3600	4822 051 10102	1k 2% 0,25W
3605	4822 116 83933	15k 1% 0,1W
3606	4822 051 20562	5k6 5% 0,1W
3607	4822 051 20101	100R 5% 0,1W
3608	4822 052 10109	⚠ 10R 5% 0,33W
3609	4822 051 10102	1k 2% 0,25W
3610	4822 051 10102	1k 2% 0,25W
3611	4822 117 11449	2k2 5% 0,1W
3612	4822 117 11449	2k2 5% 0,1W
3613	4822 117 11449	2k2 5% 0,1W
3614	4822 117 11449	2k2 5% 0,1W
3615	4822 117 10837	100k 1% 0,1W
3616	4822 117 10837	100k 1% 0,1W
3617	4822 051 20124	120k 5% 0,1W
3618	4822 051 20124	120k 5% 0,1W
3619	4822 051 20393	39k 5% 0,1W
3620	4822 051 20393	39k 5% 0,1W
3621	4822 051 20479	47R 5% 0,1W
3622	4822 117 10833	10k 1% 0,1W
3623	4822 051 10102	1k 2% 0,25W
3624	4822 051 10102	1k 2% 0,25W
3625	4822 051 20472	4k7 5% 0,1W
3626	4822 051 20472	4k7 5% 0,1W
3627	4822 051 20472	4k7 5% 0,1W
3630	4822 051 10102	1k 2% 0,25W
3631	4822 051 10102	1k 2% 0,25W
3653	4822 051 10102	1k 2% 0,25W
3711	4822 051 20479	47R 5% 0,1W
3712	4822 051 20479	47R 5% 0,1W
3713	4822 117 10834	47k 1% 0,1W
3714	4822 117 10834	47k 1% 0,1W
3715	4822 116 83933	15k 1% 0,1W
3716	4822 116 83933	15k 1% 0,1W
3717	4822 051 20273	27k 5% 0,1W
3718	4822 051 20273	27k 5% 0,1W
3720	4822 117 10833	10k 1% 0,1W
3724	4822 117 10833	10k 1% 0,1W
3726	4822 051 20822	8k2 5% 0,1W
3728	4822 117 10837	100k 1% 0,1W
3731	4822 051 10102	1k 2% 0,25W
3732	4822 051 10102	1k 2% 0,25W
3733	4822 117 11448	180R 1% 0,1W
3734	4822 117 11448	180R 1% 0,1W
3735	4822 117 10834	47k 1% 0,1W
3736	4822 117 10834	47k 1% 0,1W
3737	4822 117 10833	10k 1% 0,1W
3738	4822 117 10833	10k 1% 0,1W
3741	4822 117 10833	10k 1% 0,1W
3742	4822 117 10833	10k 1% 0,1W
3743	4822 051 20393	39k 5% 0,1W
3744	4822 051 20393	39k 5% 0,1W
3745	4822 117 10837	100k 1% 0,1W
3746	4822 117 10837	100k 1% 0,1W
3747	4822 051 20472	4k7 5% 0,1W
3748	4822 051 20472	4k7 5% 0,1W
3749	4822 051 10102	1k 2% 0,25W
3750	4822 051 10102	1k 2% 0,25W
3751	4822 117 11448	180R 1% 0,1W
3752	4822 117 11448	180R 1% 0,1W
3753	4822 117 10834	47k 1% 0,1W
3754	4822 117 10834	47k 1% 0,1W
3755	4822 117 10833	10k 1% 0,1W
3756	4822 117 10833	10k 1% 0,1W
3757	4822 051 20124	120k 5% 0,1W
3758	4822 117 10837	100k 1% 0,1W
3759	4822 051 20472	4k7 5% 0,1W
3760	4822 116 52283	4k7 5% 0,5W
3760	4822 051 20472	4k7 5% 0,1W /22
3761	4822 051 20101	100R 5% 0,1W
3764	4822 051 20391	390R 5% 0,1W
3765	4822 051 20122	1k2 5% 0,1W
3766	4822 117 11149	82k 1% 0,1W
3767	4822 051 20334	330k 5% 0,1W
3768	4822 051 20154	150k 5% 0,1W
3769	4822 051 20154	150k 5% 0,1W
3770	4822 051 20333	33k 5% 0,1W
3771	4822 051 20333	33k 5% 0,1W
3772	4822 051 20561	560R 5% 0,1W
3773	4822 117 10834	47k 1% 0,1W
3774	4822 117 10834	47k 1% 0,1W
3775	4822 117 10834	47k 1% 0,1W
3790	4822 117 11449	2k2 5% 0,1W
3791	4822 117 11449	2k2 5% 0,1W
3791	4822 051 10102	1k 2% 0,25W /22
3792	4822 050 21003	10k 1% 0,6W
3793	4822 051 20472	4k7 5% 0,1W

ELECTRICAL PARTS LIST - AV BOARD

RESISTORS

3812	4822 117 11449	2k2 5% 0,1W
3813	4822 117 11449	2k2 5% 0,1W
3814	4822 117 10833	10k 1% 0,1W
3815	4822 051 20472	4k7 5% 0,1W
3816	4822 051 20121	120R 5% 0,1W
3819	4822 116 81154	2R2 5% 0,5W
3820	4822 051 20562	5k6 5% 0,1W
3821	4822 117 10833	10k 1% 0,1W
3822	4822 117 11449	2k2 5% 0,1W
3823	4822 051 20562	5k6 5% 0,1W
3824	4822 050 11002	1k 1% 0,4W
3825	4822 117 10834	47k 1% 0,1W
3826	4822 117 10834	47k 1% 0,1W
3827	4822 051 10102	1k 2% 0,25W
3827	4822 117 11503	220R 1% 0,1W /22
3828	4822 051 10102	1k 2% 0,25W
3828	4822 117 11503	220R 1% 0,1W /22
3829	4822 051 10102	1k 2% 0,25W
3829	4822 117 11503	220R 1% 0,1W /22
3833	4822 051 20101	100R 5% 0,1W
3836	4822 051 20339	33R 5% 0,1W
3851	4822 051 20829	82R 5% 0,1W
3852	4822 051 20829	82R 5% 0,1W
3857	4822 051 20829	82R 5% 0,1W
3901	4822 051 20471	470R 5% 0,1W
3902	4822 117 11449	2k2 5% 0,1W
3903	4822 117 11504	270R 1% 0,1W
3904	4822 117 11503	220R 1% 0,1W
3905	4822 051 20121	120R 5% 0,1W
3906	4822 051 20479	47R 5% 0,1W
3907	4822 051 20479	47R 5% 0,1W
3908	4822 051 20471	470R 5% 0,1W
3909	4822 117 11449	2k2 5% 0,1W
3910	4822 117 11504	270R 1% 0,1W
3911	4822 117 11503	220R 1% 0,1W
3912	4822 051 20121	120R 5% 0,1W
3913	4822 051 20479	47R 5% 0,1W
3914	4822 051 20479	47R 5% 0,1W
3936	4822 051 20471	470R 5% 0,1W
3937	4822 117 11449	2k2 5% 0,1W
3938	4822 117 11504	270R 1% 0,1W
3939	4822 051 20121	120R 5% 0,1W
3940	4822 117 11503	220R 1% 0,1W
3941	4822 051 20479	47R 5% 0,1W
3942	4822 051 20479	47R 5% 0,1W
3945	4822 051 20471	470R 5% 0,1W
3946	4822 051 20471	470R 5% 0,1W
3947	4822 052 10478 ⚠	4R7 5% 0,33W
3948	4822 052 10478 ⚠	4R7 5% 0,33W
3949	4822 117 10353	150R 1% 0,1W
3950	4822 117 11504	270R 1% 0,1W
3951	4822 117 11504	270R 1% 0,1W
3952	4822 117 11448	180R 1% 0,1W
3953	4822 117 11449	2k2 5% 0,1W
3954	4822 051 10102	1k 2% 0,25W
3954	4822 117 11503	220R 1% 0,1W /22
3955	4822 051 10102	1k 2% 0,25W
3955	4822 117 11503	220R 1% 0,1W /22
3956	4822 051 20561	560R 5% 0,1W
3957	4822 051 20561	560R 5% 0,1W
3958	4822 051 20392	3k9 5% 0,1W
3959	4822 051 20392	3k9 5% 0,1W
3960	4822 117 10965	18k 1% 0,1W
3961	4822 117 11449	2k2 5% 0,1W
3962	4822 117 11504	270R 1% 0,1W
3963	4822 051 20479	47R 5% 0,1W
3964	4822 051 20471	470R 5% 0,1W
3965	4822 117 11503	220R 1% 0,1W
3966	4822 051 20479	47R 5% 0,1W
3967	4822 051 20121	120R 5% 0,1W
3970	4822 117 10965	18k 1% 0,1W
3971	4822 117 10965	18k 1% 0,1W
3972	4822 117 10965	18k 1% 0,1W
3973	4822 117 10834	47k 1% 0,1W
3974	4822 117 10833	10k 1% 0,1W
3975	4822 117 10833	10k 1% 0,1W
3978	4822 117 11139	1k5 1% 0,1W
3979	4822 117 10834	47k 1% 0,1W
3980	4822 117 10834	47k 1% 0,1W
3982	4822 117 10837	100k 1% 0,1W
3983	4822 117 11149	82k 1% 0,1W
3984	4822 117 10837	100k 1% 0,1W
3985	4822 117 11149	82k 1% 0,1W
3986	4822 117 11454	820R 1% 0,1W
3987	4822 117 11454	820R 1% 0,1W
3988	4822 117 11454	820R 1% 0,1W
3989	4822 117 11454	820R 1% 0,1W
3990	4822 051 20471	470R 5% 0,1W
3991	4822 117 10965	18k 1% 0,1W
3992	4822 051 20471	470R 5% 0,1W
3993	4822 051 20471	470R 5% 0,1W
4401	4822 051 20008	0R Jumper 0805
4402	4822 051 20008	0R Jumper 0805
4403	4822 051 20008	0R Jumper 0805
4404	4822 051 20008	0R Jumper 0805
4405	4822 051 20008	0R Jumper 0805
4406	4822 051 20008	0R Jumper 0805
4407	4822 051 20008	0R Jumper 0805
4408	4822 051 20008	0R Jumper 0805
4409	4822 051 20008	0R Jumper 0805
4410	4822 051 20008	0R Jumper 0805
4411	4822 051 20008	0R Jumper 0805
4412	4822 051 20008	0R Jumper 0805
4413	4822 051 20008	0R Jumper 0805
4516	4822 051 20008	0R Jumper 0805
4578	4822 051 20008	0R Jumper 0805
4650	4822 051 20008	0R Jumper 0805
4651	4822 051 20008	0R Jumper 0805
4652	4822 051 20008	0R Jumper 0805
4653	4822 051 20008	0R Jumper 0805
4654	4822 051 20008	0R Jumper 0805
4655	4822 051 20008	0R Jumper 0805
4656	4822 051 20008	0R Jumper 0805
4658	4822 051 20008	0R Jumper 0805
4659	4822 051 20008	0R Jumper 0805
4669	4822 051 20008	0R Jumper 0805
4670	4822 051 20008	0R Jumper 0805
4671	4822 051 20008	0R Jumper 0805
4672	4822 051 20008	0R Jumper 0805
4673	4822 051 20008	0R Jumper 0805
4674	4822 051 20008	0R Jumper 0805
4675	4822 051 20008	0R Jumper 0805
4676	4822 051 20008	0R Jumper 0805
4677	4822 051 20008	0R Jumper 0805
4678	4822 051 20008	0R Jumper 0805
4679	4822 051 20008	0R Jumper 0805
4680	4822 051 20008	0R Jumper 0805
4681	4822 051 20008	0R Jumper 0805
4683	4822 051 20008	0R Jumper 0805
4684	4822 051 20008	0R Jumper 0805
4685	4822 051 20008	0R Jumper 0805
4688	4822 051 20008	0R Jumper 0805
4689	4822 051 20008	0R Jumper 0805
4690	4822 051 20008	0R Jumper 0805
4691	4822 051 20008	0R Jumper 0805
4692	4822 051 20008	0R Jumper 0805
4693	4822 051 20008	0R Jumper 0805
4694	4822 051 20008	0R Jumper 0805
4695	4822 051 20008	0R Jumper 0805
4696	4822 051 20008	0R Jumper 0805
4697	4822 051 20008	0R Jumper 0805
4698	4822 051 20008	0R Jumper 0805
4700	4822 051 20008	0R Jumper 0805
4704	4822 051 20008	0R Jumper 0805
4705	4822 051 20008	0R Jumper 0805
4706	4822 051 20008	0R Jumper 0805
4707	4822 051 20008	0R Jumper 0805
4708	4822 051 20008	0R Jumper 0805
4709	4822 051 20008	0R Jumper 0805
4710	4822 051 20008	0R Jumper 0805
4711	4822 051 20008	0R Jumper 0805
4712	4822 051 20008	0R Jumper 0805
4713	4822 051 20008	0R Jumper 0805
4714	4822 051 20008	0R Jumper 0805
4715	4822 051 20008	0R Jumper 0805
4716	4822 051 20008	0R Jumper 0805
4717	4822 051 20008	0R Jumper 0805
4718	4822 051 20008	0R Jumper 0805
4720	4822 051 20008	0R Jumper 0805
4721	4822 051 20008	0R Jumper 0805
4722	4822 051 20008	0R Jumper 0805
4723	4822 051 20008	0R Jumper 0805
4724	4822 051 20008	0R Jumper 0805
4725	4822 051 20008	0R Jumper 0805
4726	4822 051 20008	0R Jumper 0805
4727	4822 051 20008	0R Jumper 0805
4902	4822 051 20008	0R Jumper 0805
4903	4822 051 20008	0R Jumper 0805
4904	4822 051 20008	0R Jumper 0805
4906	4822 051 20008	0R Jumper 0805
4907	4822 051 20008	0R Jumper 0805
4908	4822 051 20008	0R Jumper 0805
4912	4822 051 20008	0R Jumper 0805
4913	4822 051 20008	0R Jumper 0805
4914	4822 051 20008	0R Jumper 0805
4962	4822 051 20008	0R Jumper 0805
4963	4822 051 20008	0R Jumper 0805
4964	4822 051 20008	0R Jumper 0805
4965	4822 051 20008	0R Jumper 0805
4966	4822 051 20008	0R Jumper 0805
4967	4822 051 20008	0R Jumper 0805

COILS & FILTERS

5000	4822 157 70601	Coil 100µH 10%
5511	4822 157 62552	Coil 2,2µH 5%
5512	4822 157 10586	Coil 2,2µH 10%

DIODES

6512	4822 130 30862	BZX79-C9V1
6513	4822 130 31878	1N4003G
6514	4822 130 31878	1N4003G
6515	4822 130 30621	1N4148
6517	4822 130 30621	1N4148
6518	4822 130 30621	1N4148
6519	4822 130 30621	1N4148
6520	4822 130 30621	1N4148
6521	4822 130 30621	1N4148
6531	4822 130 30621	1N4148
6711	4822 130 34233	BZX79-C5V1
6712	4822 130 30621	1N4148
6713	4822 130 30621	1N4148
6720	4822 130 30621	1N4148
6721	4822 130 30621	1N4148
6722	4822 130 30621	1N4148
6723	4822 130 30621	1N4148
6901	4822 130 30621	1N4148
6902	4822 130 34278	BZX79-C6V8
6903	4822 130 30621	1N4148

ELECTRICAL PARTS LIST - AV BOARD

DIODES

6904	4822 130 34278	BZX79-C6V8
6911	4822 130 30621	1N4148
6912	4822 130 34278	BZX79-C6V8
6961	4822 130 30621	1N4148
6962	4822 130 34278	BZX79-C6V8

TRANSISTORS & INTEGRATED CIRCUITS

7501	4822 209 17386	TDA7437T
7502	4822 209 83357	NJM4560M
7503	4822 130 40959	BC547B
7504	5322 130 60159	BC847B
7505	5322 130 60159	BC847B
7506	5322 130 60159	BC847B
7507	5322 130 60159	BC847B
7508	5322 130 60159	BC847B
7509	4822 130 42804	BC817-25
7510	4822 130 42804	BC817-25
7511	4822 130 60373	BC857B
7514	4822 209 31378	NJM4556AM
7515	4822 130 60373	BC857B
7516	4822 130 60373	BC857B
7517	4822 209 83357	NJM4560M
7521	5322 130 60159	BC847B
7522	5322 130 60159	BC847B
7529	4822 130 60373	BC857B
7534	5322 209 14481	HEF4053BT
7536	4822 209 31378	NJM4556AM
7537	4822 209 31378	NJM4556AM
7538	4822 209 16262	74HC4016D
7539	5322 130 60159	BC847B
7540	9337 142 60653	74HC04D
7542	5322 130 60159	BC847B
7544	5322 130 60159	BC847B
7546	4822 130 60373	BC857B
7547	5322 130 60159	BC847B
7548	5322 130 60159	BC847B
7549	4822 209 17345	M62320FP
7550	4822 130 41246	BC327-25
7551	5322 130 60159	BC847B
7555	4822 130 60373	BC857B
7556	5322 130 60159	BC847B
7557	5322 130 60159	BC847B
7581	5322 130 60159	BC847B
7582	4822 130 44568	BC557B
7583	5322 130 60159	BC847B
7584	4822 130 44568	BC557B
7591	5322 130 60159	BC847B
7592	4822 130 44568	BC557B
7593	4822 130 60373	BC857B
7594	4822 209 17349	M62429FP
7595	4822 209 17349	M62429FP
7596	5322 130 60159	BC847B
7961	4822 130 44568	BC557B
7962	5322 130 60159	BC847B

Note : Only the parts mentioned in this list are normal service spare parts.

DVD Module

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1. DEALER SCRIPT

Purpose of Dealer Script

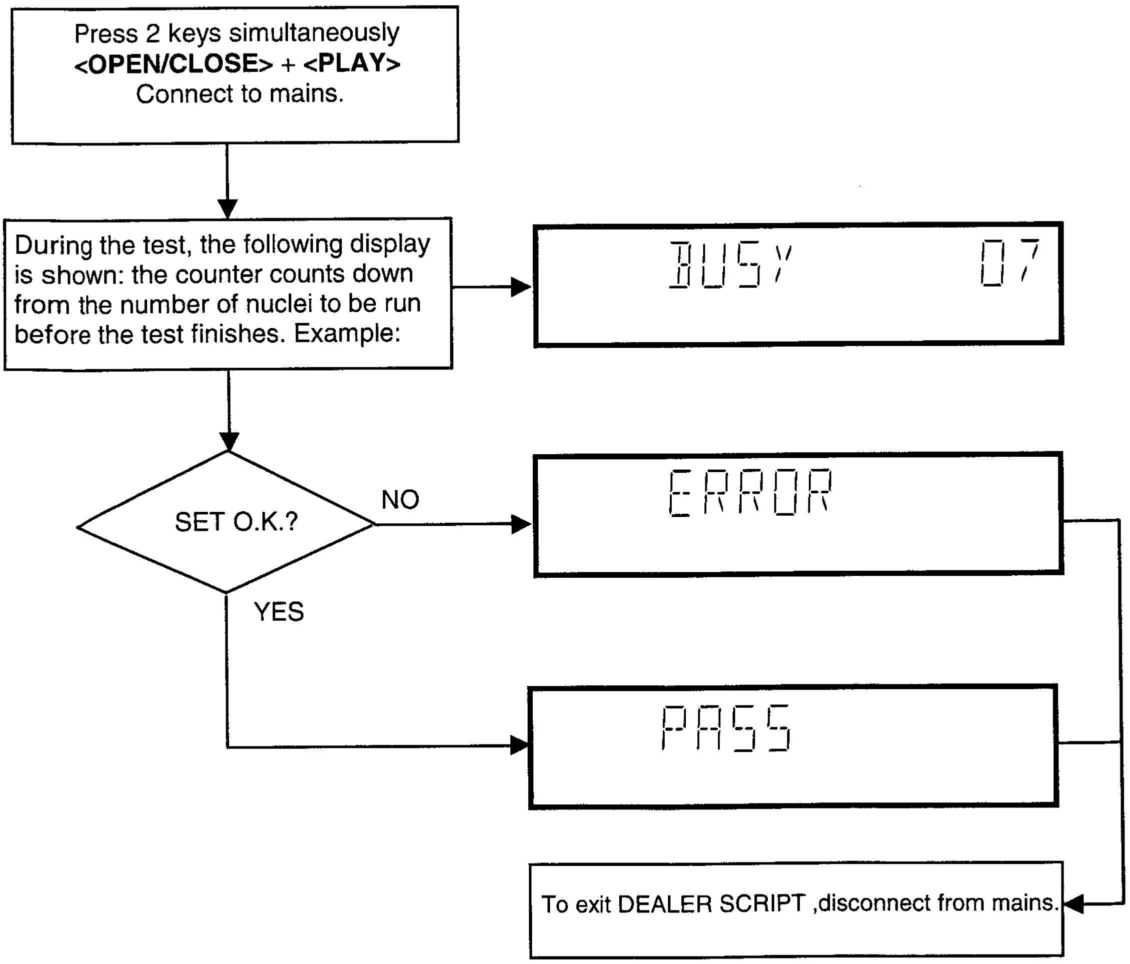
The dealer script can give a diagnosis on a standalone DVD player; no other equipment is needed to perform a number of hardware tests to check if the DVD player is faulty. The diagnosis is simply a "error" or "pass" message; no indication is given of faulty hardware modules. Only tests within the scope of the diagnostic software will be executed hence only faults within this scope can be detected.

Contents of Dealer Script

The dealer script executes all diagnostic nuclei that do not need any user interaction and are meaningful on a standalone DVD player.

The nuclei called in the dealer script are the following (the number after each nucleus name corresponds with the number being on the local display when the nucleus is executed during the dealer script):

Nucleus		**Description**
VideoColSetupComm	9	Check the I2C interface with the RGB video processor on the Audio/Video board (only for DVD players with RGB video processor).
VideoScartSwComm	8	Checks the I2C interface with the scart switch on the Audio/Video board
PapChksFl	7	Calculate and verify checksum of FLASH memory
PapDramWrR	6	Pattern test of all locations in the DRAM(s)
PapI2cDisp	5	Checks the I2C interface with the slave processor on the display PCB
PapS2bEcho	4	Checks the I2C interface to the basic engine
PapI2cNvram	3	Checks the I2C interface with the NVRAM
PapNvramWrR	2	Pattern test of all locations in the NVRAM
CompSdramWrR	1	Pattern test of all locations in the SDRAM(s)



Press 2 keys simultaneously **<OPEN/CLOSE>** + **<PLAY>** Connect to mains.

During the test, the following display is shown: the counter counts down from the number of nuclei to be run before the test finishes. Example:

To exit DEALER SCRIPT ,disconnect from mains.

2. PLAYER SCRIPT

Purpose of Player Script

The Player script will give the opportunity to perform a test that will determine which of the DVD player's modules are faulty, to read the error log and error bits and to perform an endurance loop test.

To successfully perform the tests, the DVD player must be connected to a TV set to check the output of a number of nuclei. For DVDv2B a multi-channel amplifier, a set of 6 boxes and an external video source are necessary to test. To be able to check results of certain nuclei, the player script expects some interaction of the user (i.e. to approve a test picture or a test sound). Some nuclei (e.g. nuclei that test functionality of the Basic Engine module) require that the DVD player itself is opened, to enable the user to observe moving parts and approve their movement visually.

Only tests within the scope of the diagnostic software will be executed hence only faults within this scope can be detected.

Contents of Player Script

The player script contains all nuclei that are useful on a DVD player that is connected to a TV-set and help to determine which module of the DVD player is faulty, as well as to read out the contents of the error logs.

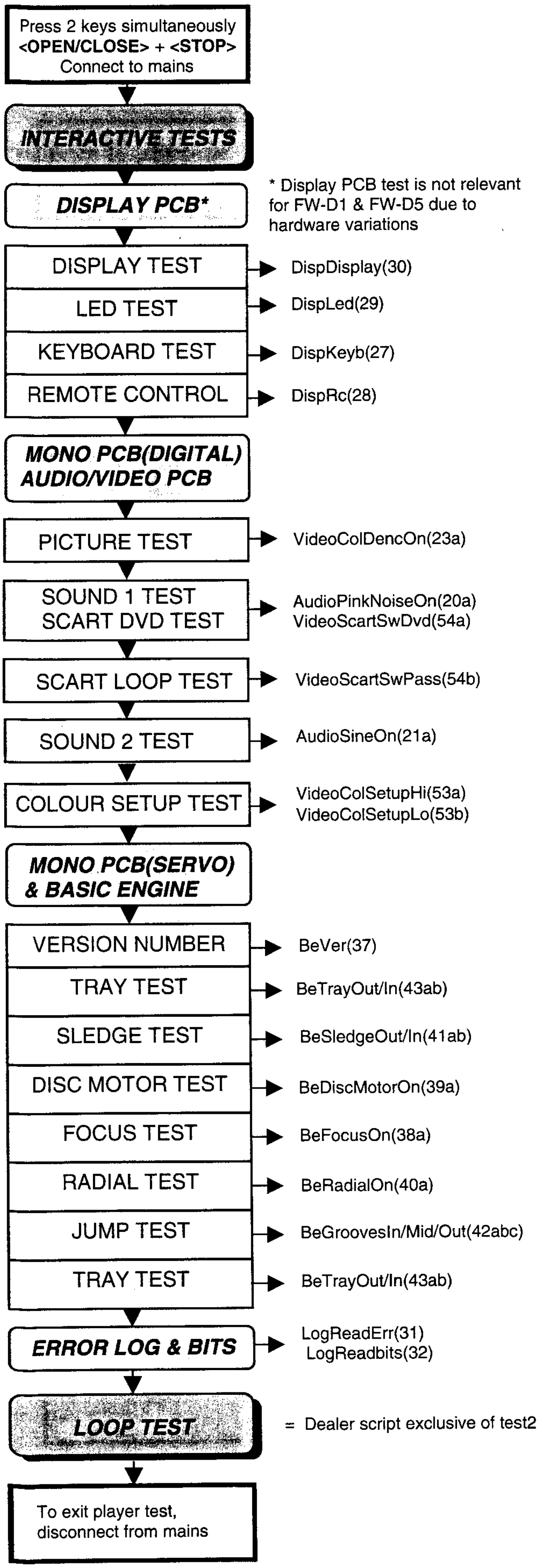
Structure of Player Script

The player script consists of a set of nuclei testing the three hardware modules in the DVD player: the Display PCB*, the Digital PCB and the Basic Engine.

Note: Display PCB tests are not relevant to FW-D1 & FW-D5 sets

Nuclei run by the player test need some user interaction; in the next paragraph this interaction is described. The player test is done in two phases:

1. Interactive tests:
   This part of the player test depends strongly on user interaction and input to determine nucleus results and to progress through the full test. Reading the error log and error bits information can be useful to determine any errors that occurred recently during normal operation of the DVD player.
2. The loop test will perform the same nuclei as the dealer test, but it will loop through the list of nuclei indefinitely.


Press 2 keys simultaneously
<OPEN/CLOSE> + <STOP>
Connect to mains
INTERACTIVE TESTS
DISPLAY PCB*
* Display PCB test is not relevant for FW-D1 & FW-D5 due to hardware variations
DISPLAY TEST
DispDisplay(30)
LED TEST
DispLed(29)
KEYBOARD TEST
DispKeyb(27)
REMOTE CONTROL
DispRc(28)
MONO PCB(DIGITAL) AUDIO/VIDEO PCB
PICTURE TEST
VideoColDencOn(23a)
SOUND 1 TEST
SCART DVD TEST
AudioPinkNoiseOn(20a)
VideoScartSwDvd(54a)
SCART LOOP TEST
VideoScartSwPass(54b)
SOUND 2 TEST
AudioSineOn(21a)
COLOUR SETUP TEST
VideoColSetupHi(53a)
VideoColSetupLo(53b)
MONO PCB(SERVO) & BASIC ENGINE
VERSION NUMBER
BeVer(37)
TRAY TEST
BeTrayOut/In(43ab)
SLEDGE TEST
BeSledgeOut/In(41ab)
DISC MOTOR TEST
BeDiscMotorOn(39a)
FOCUS TEST
BeFocusOn(38a)
RADIAL TEST
BeRadialOn(40a)
JUMP TEST
BeGroovesIn/Mid/Out(42abc)
TRAY TEST
BeTrayOut/In(43ab)
ERROR LOG & BITS
LogReadErr(31)
LogReadbits(32)
LOOP TEST
= Dealer script exclusive of test2
To exit player test, disconnect from mains

3. INTERACTIVE TESTS

3.1 DISPLAY PCB*

Note: The tests on this Display PCB are not relevant to FW-D1 and FW-D5 families.

DISPLAY TEST & LED TEST

Press 2 times the NEXT key to skip the Display and LED test.

KEYBOARD TEST

The display shows:

```
TD-
```

Press the NEXT key for more than 1 second, the display will change to:

```
TD-    FAIL
```

Press NEXT key to proceed to the next test.

REMOTE CONTROL TEST

The display shows:

```
RC-
```

Press the NEXT key for more than 1 second, the display will change to:

```
RC-    FAIL
```

Press NEXT key to proceed to the next test.

3.2 MONO PCB DIGITAL PART

PICTURE TEST

This test is performed by sending a predefined picture (colour bar) to the TV screen (nucleus VideoColDencOn) and asking the user for confirmation. The display will show the following message:

```
APP   PIC-1
```

By pressing PLAY the user confirms the test, pressing PREV will indicate the picture was invisible or incorrect. Pressing NEXT will proceed to the next test

SOUND 1 & SCART DVD TEST

The first soundtest is performed by starting a pink noise sound that needs confirmation from the user (nucleus AudioPinkNoiseOn); the display will show the following message very shortly:

```
APP   SND-1
```

This sound will only be audible from version cut3.1 of Sti5505 (item7503 on mono board) onwards. After starting up sound 1, SCART loop-trough will be simultaneously active during this test. SCART loop-trough will be measured with the aid of an external video source.

When entering the SCART loop-trough, the local display indicates:

```
SCART DVD
```

On the TV screen a colour bar (generated by nucleus VideoColDencOn) is visual and the internally generated pinknoise is audible. By pressing PLAY the user confirms the test, pressing PREV will indicate the sound was inaudible or incorrect. Pressing NEXT will proceed to the next test; if the user presses NEXT without pressing PLAY or PREV first, the result of this test will be TRUE (sound ok).

By pressing the NEXT button there will be switched over to the external source, this must become now visible on the TV screen (using the SCART). The local display indicates:

```
SCART LOOP
```

The internally generated colour bar is still available on the CVBS and Y/C outputs. And the pinknoise-signal is still available on the cinch audio outputs. By pressing the PREV button, the internal generated colour bar becomes visual again. The test can be left by pressing the NEXT key for more than one second.

SOUND 2 TEST

The second soundtest is performed by producing a sine sound (nucleus AudioSineOn). The signal can be stopped by pressing the STOP-key. The display will show the following message:

```
APP   SND-2
```

By pressing PLAY the user confirms the test, pressing PREV will indicate that something went wrong. Pressing NEXT will proceed to the next; if the user presses NEXT without pressing PLAY or PREV first, the result of this test will be TRUE (sound ok).

3.3 BASIC ENGINE

VERSION NUMBER

In the basic engine tests, the version number of the Basic Engine will be shown first, as the following example:

```
BE-03_25_02
```

By pressing the NEXT key, the Basic Engine tests are started.

TRAY TEST

First, the tray is tested. The purpose of this test is also to give the user the opportunity to put a disc in the tray of the DVD player. Some tests on the Basic Engine require that a disc(e.g. DVD MPTD test disc) is present in the player. At the end of the Basic Engine tests this tray test will be repeated solely to enable the user to remove the disc in the tray. The local display will look as follows:

```
DO-BE TRAY
```

By pressing PLAY the user can toggle the position of the tray. Note that this test will not contribute to the test result of the Basic Engine. Pressing NEXT will proceed to the next test, after the tray has been closed (by the software) if it was open.

SLEDGE TEST(visual test)

The second Basic Engine test tests the sledge; the user can move the sledge as many times as desired by using PLAY (nucleus BeSledgeOut) and PREV (nucleus BeSledgeIn). Pressing NEXT on the local keyboard proceeds to the next test. Note that this test will not contribute to the test result of the Basic Engine. The local display will look as follows during the sledge test:

```
DO BE SLED
```

DISC MOTOR TEST(visual test)

The third Basic Engine test tests the disc motor (nucleus BeDiscMotorOn); the local display looks as follows:

```
APP BE DISC
```

By pressing PLAY the user confirms that the disc motor is running; pressing PREV indicates the disc motor does not work. Pressing NEXT proceeds to the next test, after a reset of the disc motor (nucleus BeDiscMotorOff). If the user presses NEXT before pressing PLAY or PREV, the result of this test will be TRUE (disc motor is running).

FOCUS TEST(visual test)

The fourth Basic Engine test tests the focusing; first focusing is turned on by calling nucleus BeFocusOn. The display will look as follows:

```
APP BEFOCUS
```

By pressing PLAY the user confirms that the focusing was succesful; pressing PREV indicates a focusing failure. Pressing NEXT proceeds to the next test after a reset of the focussing (nucleus BeFocusOff); if NEXT is pressed before PLAY or PREV, the result of this test will be TRUE (focus successful).

RADIAL TEST(visual & listening test)

The fifth Basic Engine test tests the radial functionality (nucleus BeRadialOn); the local display looks as follows:

```
APP BERADIA
```

By pressing PLAY the user confirms that the radial function worked; pressing PREV indicates the function does not work. Pressing NEXT proceeds to the next test, after a reset of the radial (nucleus BeRadialOff). If the user presses NEXT before pressing PLAY or PREV, the result of this test will be TRUE (radial successful).

JUMP TEST(listening test)

The sixth and last Basic Engine test tests the jumping by calling nuclei BeGroovesIn, BeGroovesMid and BeGroovesOut. During this test, the local display looks as follows:

```
DO BE GROO
```

The user can switch between the three different types of groove settings by pressing PLAY (forward to next nucleus in the list In-Mid-Out) or PREV (backward in the list In-Mid-Out). This is done in a cyclic manner; note that this test will not contribute to the test result of the Basic Engine. Pressing NEXT proceeds to the next test, after the disc motor has been shut off with a call to nucleus BeDiscMotorOff.

TRAY TEST

As a last action for the Basic Engine tests, the tray test is repeated. The local display will look as follows:

```
DO-BE TRAY
```

This test is meant to give the user the opportunity to remove the disc in the tray. The tray position can be toggled using the PLAY key. The tray will be closed (by the software, if it is open) before proceeding to the next test when the user presses the NEXT key.

3.4 ERROR LOG & BITS

ERROR LOG

Reading the error log and error bits information can be useful to determine any errors that occurred recently during normal operation of the DVD player. Reading the error log is done by nucleus LogReadErr. The display during the errorlog readout looks as follows :

```
EL-0015010C
```

By pressing PLAY or PREV the user can move forward or backward (respectively) through the logged error codes. The highlighted number indicates which errorcode is currently on display (in the example above, errorcode number 4 is displayed). If "0000" is displayed at all positions, the error log is empty. Display of the logged errors is done in a cyclic manner. The errorcode with the lowest highlighted number is the most recent.

By pressing NEXT on the local keyboard, the user can proceed to the next test.

ERROR BITS

Reading the error bits is done by nucleus LogReadBits. The display during the errorbits readout looks as follows:

```
EB-        04
```

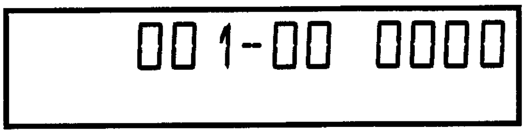
Only the set errorbits will be shown by their (decimal) number. Refer to the appropriate documentation for the explanation of each bit number. If the display only shows "EB-0", no error bits were set.

By pressing NEXT the user can continue to the next test.

	Read Error LOG in player script	Read error bits in player script
Basic engine errors	**Value:**	**Value:**
Command to the Basic Engine not allowed in this state or unknown command	150101	8
Parameter(s) from the command to the Basic Engine is not valid	150102	7
Sledge could not be moved to the inner home position	150103	6
Focus failure	150104	5
Turntable motor could not be reached within timeout	150105	4
Radial servo could get on track on the disc	150106	3
PLL could not lock in the accessing or tracking state	150107	2
Subcode or sector information could not be read	150108	1
requested subcode could not be found	150109	16
Tray could not be closed or opened completely	15010A	15
TOC could not be read within timeout	15010B	14
The requested seek on the disc could not be executed	15010C	13
A requested lead is not on the disc	15010D	12
A non existing burst cutting area is requested	15010E	11
S2b communication error	1501F0	10
S2b communication error	1501F1	9
S2b communication error	1501F3	24
S2b communication error	1501F4	23
S2b communication error	1501F5	22
Digital PWB errors		
Communication error with the Sti 5505	90000	32
Communication error with the Sti 5505	90001	31
Display processor errors		
Communication error with the display processor	190000	40

3.5 LOOP TEST

At the start of the loop test, the display will show the result of the interactive player test:



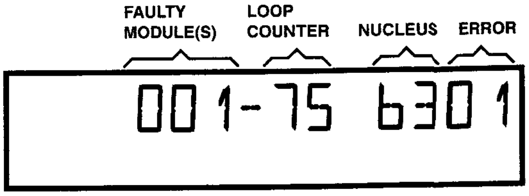
The left side of the display contains a 3-digit code, which can have a value between 000 and 111. these values are to be interpreted as follows:

Display Value	Indication for each module		
	Basic Engine	Mono PCB	Display PCB
000	ok	ok	ok
001	ok	ok	faulty
010	ok	faulty	ok
011	ok	faulty	faulty
100	faulty	ok	ok
101	faulty	ok	faulty
110	faulty	faulty	ok
111	faulty	faulty	faulty

The loop test will perform the same nuclei as the dealer test, but it will loop through the list of nuclei indefinitely.
The display of the DVD player will show not only the 3-digits indicating the correctly/faulty modules and the last found error code, but also a loop counter indicating how many times the loop has been gone through.

Note: Only faults within the scope of the diagnostic software are detected.

Example:



The 2-digit after the hyphen indicates the number of times the loop test has been performed.
The following 4-digits show the last error that was found while running the loop test. The first 2 digits of this code indicate which nucleus resulted in a fault and the next 2 digits refer to the faultcode within that nucleus.
For further explanation of the error code, see list of error codes on below.

ERROR CODES LOOP TEST

ERROR CODE	NUCLEUS NUMBER	ERROR DESCRIPTION
0601	6	Calculated checksum of FLASH is not correct
0901	9	The DVD DRAM is faulty
1101	11	I2C bus busy before start
1102		NVRAM access time-out
1103		No NVRAM Acknowledge
1104		NVRAM reply time-out
1201	12	I2C bus busy
1202		I2C bus not working
1203		Slave controller not responding
1204		Slave response is not correct
1301	13	Parity error from basic engine to serial
1302		Parity error from serial to basic engine
1303		No communication between serial and basic engine
1304		Communication time-out error
1601	16	The SDRAM is faulty
5201	52	I2c bus busy
5202		I2c bus not working
5203		Colour setup controller not responding
5204		Colour setup controller response not correct
5401	54	I2c bus busy
5402		I2c bus not working
5403		Scart switch controller not responding
5404		Scart switch controller response not correct

SERVICING THE DVD MODULE AND MONO BOARD

For repair on the DVD module (Basic Engine and the mono board), refer to Service Document:
2nd line Service Manual DVD-Monoboard 3122 785 10045

Reprogramming of Mono Board

Caution

This information is confidential and may not be distributed. Only a qualified service person should reprogram the mono board.

After replacement/repair of the mono board, the customer settings and also the region code may be lost. Reprogramming of the mono board will put the player back in the state in which it has left the factory, i.e. with the default settings and the allowed region code.

Reprogramming is limited to 25 times.
When the counter reaches 25, reprogramming is not possible anymore.
Reprogramming will be done by way of the remote control.
Put the player in stop mode, no disc loaded.
Press the following keys on the remote control:
<PLAY> followed by numerical keys ***<1> <5> <9>***
The display shows: “- - - - - - - - - - -”
Press now successively the following keys :

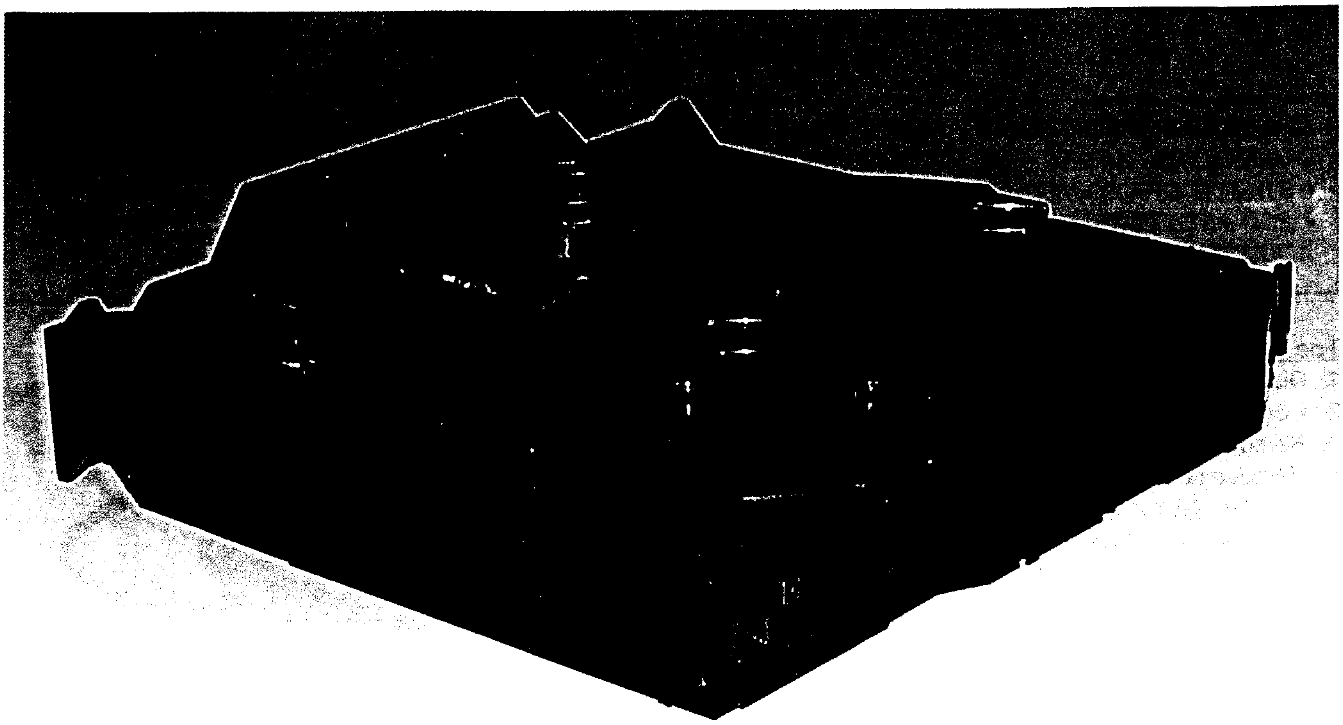
for FW-D1/21 : ***<0><4><4> <0><0><0> <0><0><0> <0><0><0> Latam***
for FW-D1/21M : ***<0><4><2> <0><0><0> <0><0><0> <0><0><0> AP***
for FW-D1/33 : ***<0><4><2> <0><0><0> <0><0><0> <0><0><0> AP***

for FW-D5/21 : ***<0><1><4> <0><0><0> <0><0><0> <0><0><0> Latam***
for FW-D5/21M : ***<0><0><5> <0><0><0> <0><0><0> <0><0><0> AP***
for FW-D5/22 : ***<0><0><1> <0><0><0> <0><0><0> <0><0><0> Europe***
for FW-D5/30 : ***<0><1><2> <0><0><0> <0><0><0> <0><0><0> AP***
for FW-D5/33 : ***<0><0><5> <0><0><0> <0><0><0> <0><0><0> AP***
for FW-D5/37 : ***<0><0><4> <0><0><0> <0><0><0> <0><0><0> US***

Press ***<PLAY>*** again.
The TV screen will become BLUE during a short time to confirm that the digital board has been reprogrammed, then the set goes to standby mode.

RESET OF VIRGIN MODE

After the player has been powered up for test by the dealer, it would have gone through the Virgin Mode. It is possible to reset the settings made during that mode before the delivery of player to the customer.
This is done by executing the Eeprom Format while in the Service Test Program (see page 3-6)



3CDC-LC

(3 Disc Carrousel Changer)

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Blockdiagram 10-5
Component Layout Main Board 10-6
Circuit Diagram part1 10-7
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Exploded View 10-10
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WARNING

CHARGED CAPACITORS ON THE SERVO BOARD MAY DAMAGE THE CD DRIVE ELECTRONICS WHEN CONNECTING A NEW CDM MECHANISM. THAT'S WHY, BESIDES THE SAFETY MEASURES LIKE

- ***SWITCH OFF POWER SUPPLY***
- ***ESD PROTECTION***

ADDITIONAL ACTIONS MUST BE TAKEN BY THE REPAIR TECHNICIAN.

The following steps have to be done when replacing the CD mechanism:

1. Disconnect CD drive flexfoil from old CD drive
2. Connect paperclip to CD drive flexfoil to short-circuit flexfoil (fig.1)
3. Remove old CD drive
4. Remove short-circuit from flexfoil
5. Connect flexfoil to new CD drive
6. Position new CD drive in its studs
7. Remove short-circuit from Laserunit

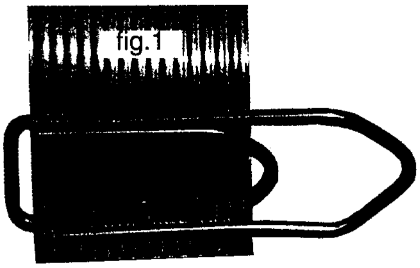
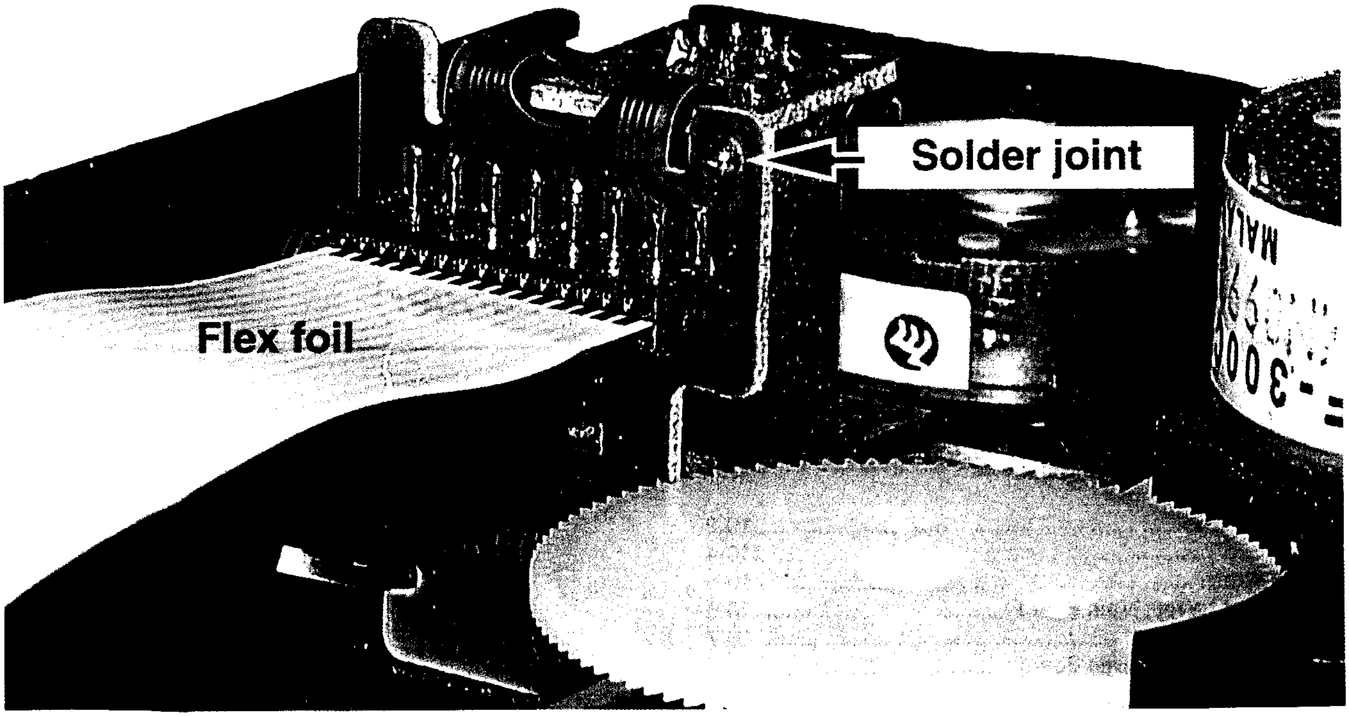
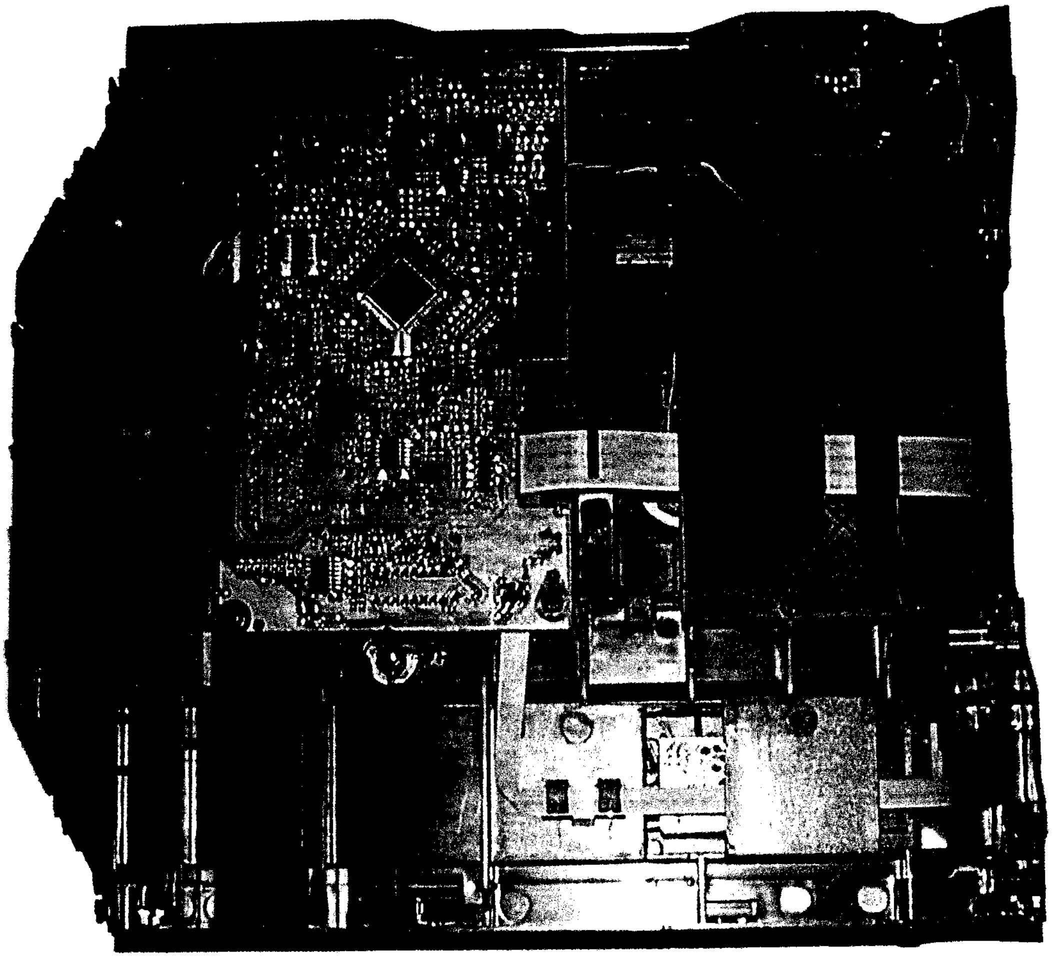


fig.1

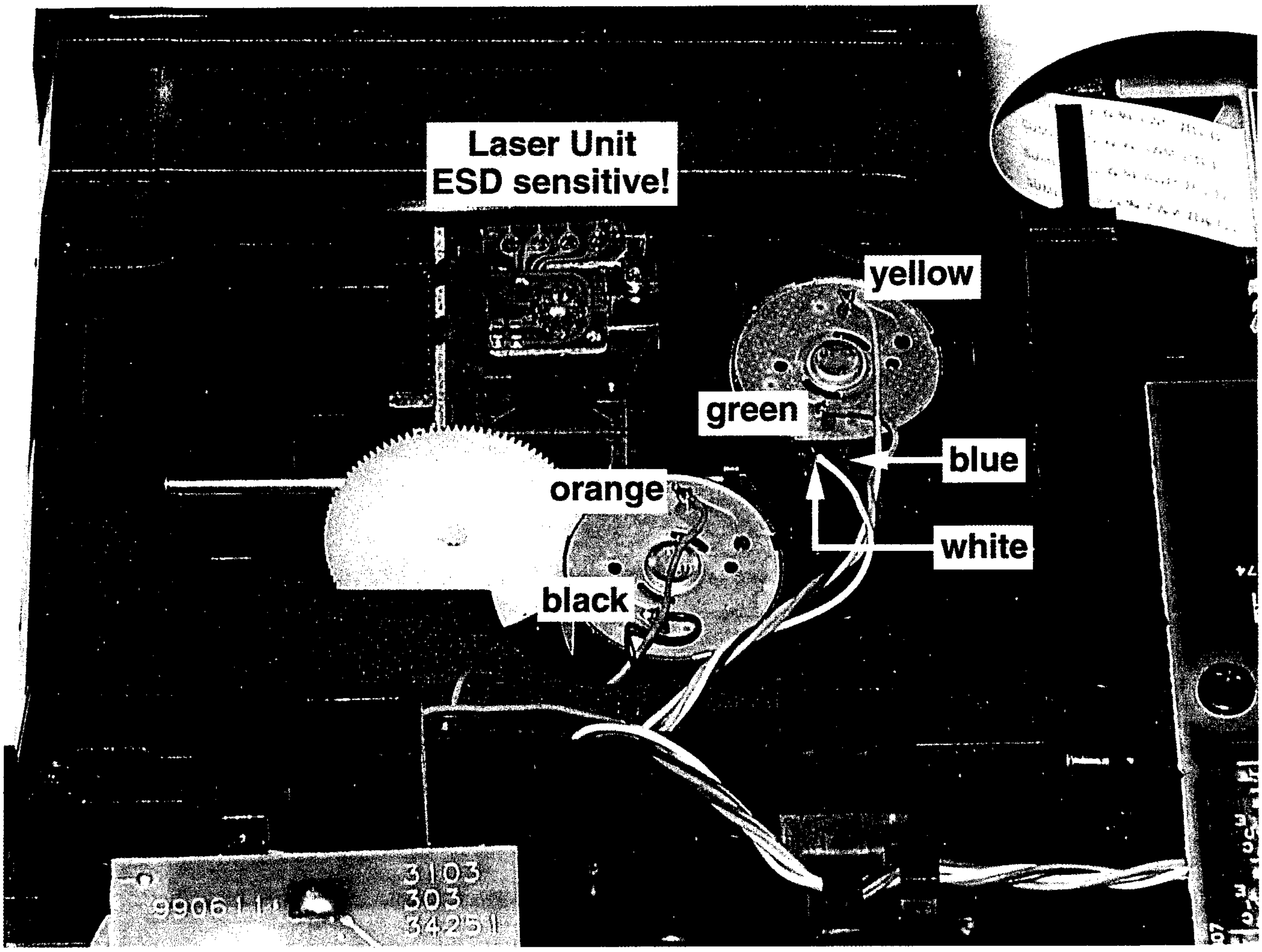
Attention: The laser diode of this CD drive is protected against ESD by a solder joint which shortcircuits the laserdiode to ground.
For proper functionality of the CD drive this solder joint must be removed **after** connection the drive to the set.



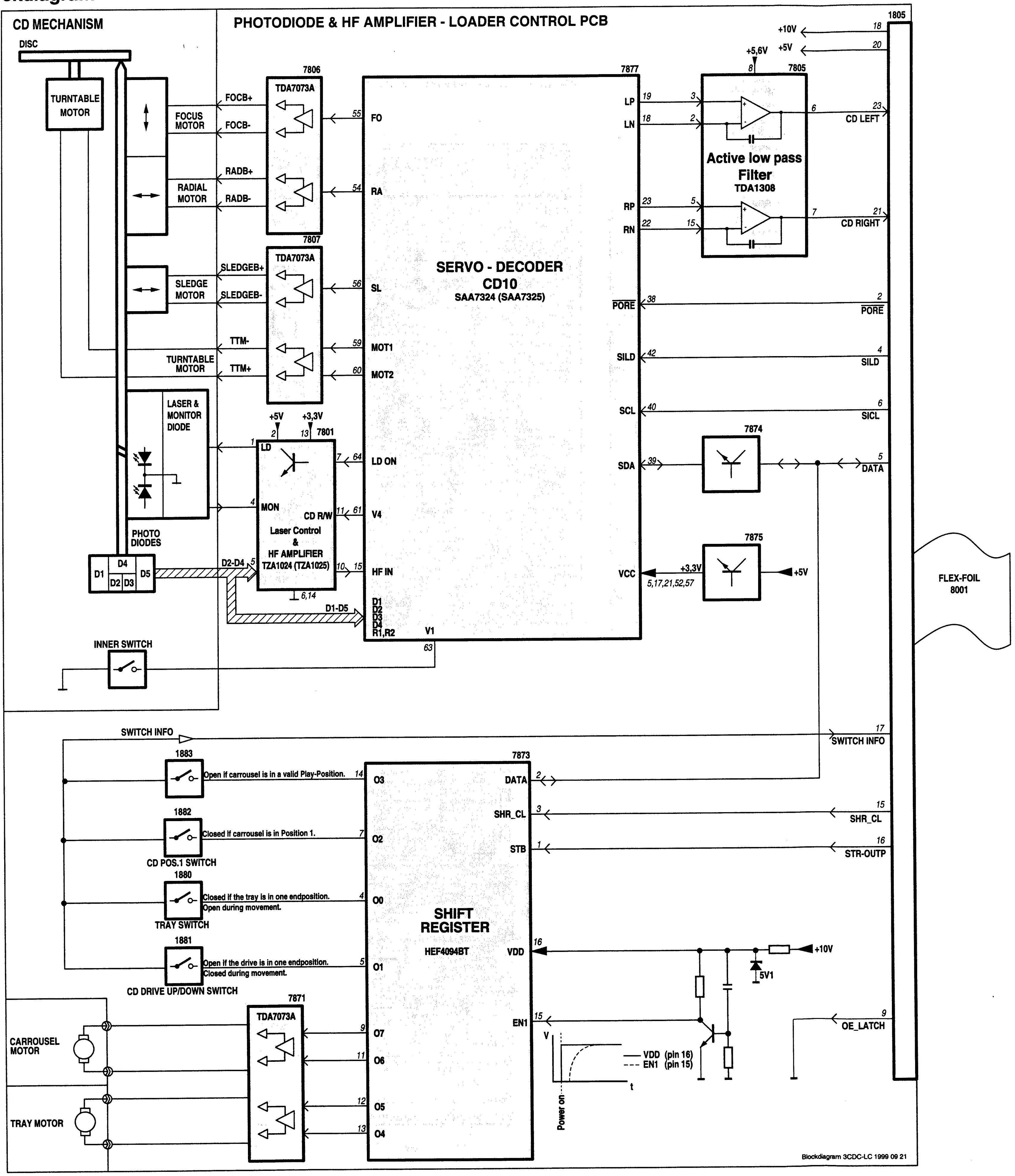
Service Position



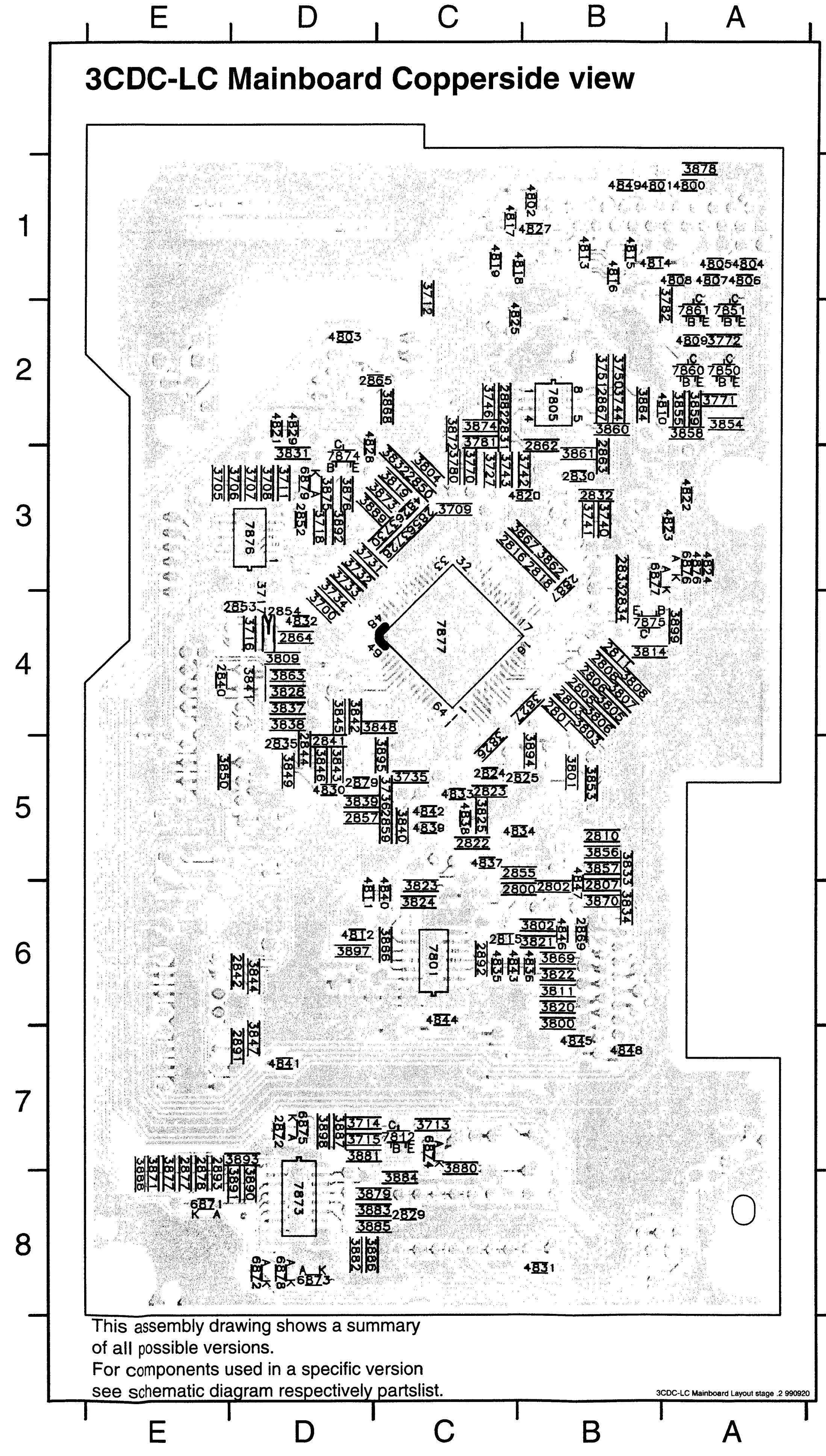
Wiring


Laser Unit
ESD sensitive!
yellow
green
blue
orange
white
black
3103
303
34251
9906

Blockdiagram


CD MECHANISM
DISC
TURNTABLE MOTOR
PHOTODIODE & HF AMPLIFIER - LOADER CONTROL PCB
FOCUS MOTOR
FOCB+
FOCB-
RADIAL MOTOR
RADB+
RADB-
SLEDGE MOTOR
SLEDGEB+
SLEDGEB-
TURNTABLE MOTOR
TTM-
TTM+
LASER & MONITOR DIODE
PHOTO DIODES
D1 D2 D3 D4 D5
D2-D4
D1-D5
7806
TDA7073A
7807
TDA7073A
7801
+5V
+3,3V
LD
MON
CD R/W
Laser Control & HF AMPLIFIER TZA1024 (TZA1025)
7877
SERVO - DECODER CD10 SAA7324 (SAA7325)
FO
RA
SL
MOT1
MOT2
LD ON
V4
HF IN
D1 D2 D3 D4 R1,R2
V1
LP
LN
RP
RN
PORE
SILD
SCL
SDA
VCC
+3,3V
5,17,21,52,57
7805
+5,6V
Active low pass Filter TDA1308
+10V
+5V
1805
CD LEFT
CD RIGHT
PORE
SILD
SICL
DATA
7874
7875
+5V
FLEX-FOIL 8001
INNER SWITCH
SWITCH INFO
1883
Open if carrousel is in a valid Play-Position.
1882
Closed if carrousel is in Position 1.
CD POS.1 SWITCH
1880
Closed if the tray is in one endposition. Open during movement.
TRAY SWITCH
1881
Open if the drive is in one endposition. Closed during movement.
CD DRIVE UP/DOWN SWITCH
7873
SHIFT REGISTER HEF4094BT
O3
O2
O0
O1
O7
O6
O5
O4
DATA
SHR_CL
STB
VDD
EN1
SWITCH INFO
SHR_CL
STR-OUTP
OE_LATCH
+10V
5V1
VDD (pin 16)
EN1 (pin 15)
Power on
7871
TDA7073A
CARROUSEL MOTOR
TRAY MOTOR
Blockdiagram 3CDC-LC 1999 09 21

3CDC-LC Mainboard Copperside view

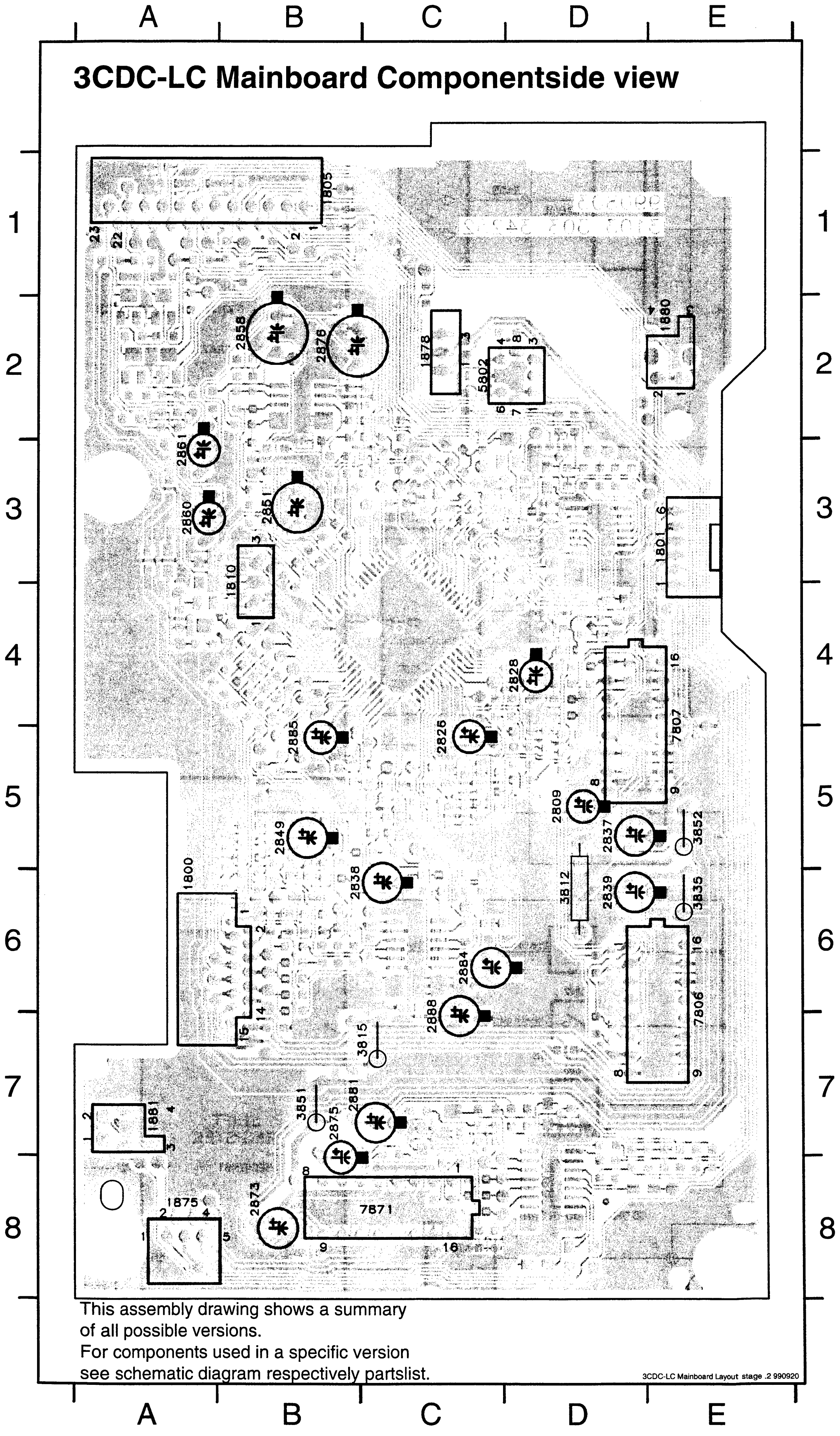

E
D
C
B
A
1
2
3
4
5
6
7
8
7877
7876
7801
7805
7873
3CDC-LC Mainboard Layout stage .2 990920

This assembly drawing shows a summary
of all possible versions.
For components used in a specific version
see schematic diagram respectively partslist.

Mapping

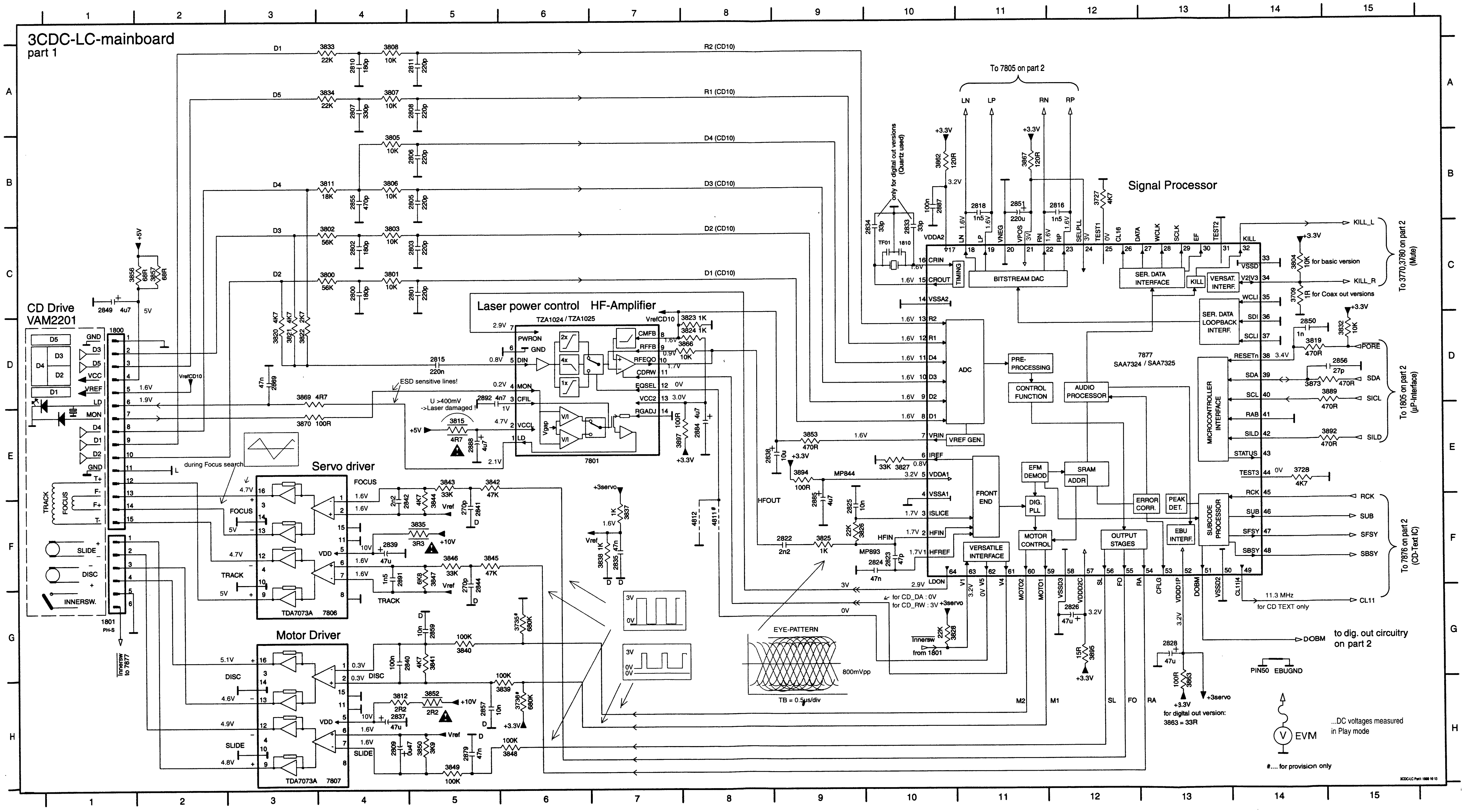
Copperside		3751	B2	3889	D3	Componentside	
2800	B6	3770	C3	3890	D8	1800	A6
2801	B4	3771	A2	3891	D8	1801	E3
2802	B6	3772	A2	3892	D3	1805	B1
2803	B4	3780	C3	3893	D7	1810	B3
2805	B4	3781	C2	3894	B5	1875	A8
2806	B4	3782	A2	3895	C5	1878	C2
2807	B6	3800	B6	3897	D6	1880	E2
2808	B4	3801	B5	3898	D7	1881	A7
2810	B5	3802	B6	3899	A4	2809	D5
2811	B4	3803	B4	4800	A1	2826	C5
2815	C6	3804	C3	4801	B1	2828	D4
2816	C3	3805	B4	4802	B1	2837	D5
2818	B3	3806	B4	4803	D2	2838	C6
2822	C5	3807	B4	4804	A1	2839	D6
2823	C5	3808	B4	4805	A1	2849	B5
2824	C5	3809	D4	4806	A1	2851	B3
2825	B5	3811	B6	4807	A1	2858	B2
2829	C8	3814	B4	4808	A1	2860	A3
2830	B3	3819	C3	4809	A2	2861	A3
2831	C2	3820	B6	4810	B2	2873	B8
2832	B3	3821	B6	4811	D6	2875	B7
2833	B3	3822	B6	4812	D6	2876	B2
2834	B4	3823	C6	4813	B1	2881	C7
2835	D5	3824	C6	4814	B1	2884	C6
2840	E4	3825	C5	4815	B1	2885	B5
2841	D5	3826	C5	4816	B1	2888	C7
2842	D6	3827	B4	4817	C1	3812	D6
2844	D5	3828	D4	4818	C1	3815	C7
2850	C3	3831	D3	4819	C1	3835	E6
2852	D3	3832	C3	4820	B3	3851	B7
2853	D4	3833	B5	4821	D2	3852	E5
2854	D4	3834	B6	4822	A3	5802	D2
2855	B5	3837	D4	4823	A3	7806	E6
2856	C3	3838	D4	4824	A3	7807	E5
2857	D5	3839	D5	4825	C2	7871	C8
2859	C5	3840	C5	4826	C3		
2862	B3	3841	D4	4827	B1		
2863	B3	3842	D4	4828	D3		
2864	D4	3843	D5	4829	D2		
2865	C2	3844	D6	4830	D5		
2867	B2	3845	D4	4831	B8		
2869	B6	3846	D5	4832	D4		
2872	D7	3847	D7	4833	C5		
2877	E8	3848	C4	4834	B5		
2878	E8	3849	D5	4835	C6		
2879	D5	3850	E5	4836	B6		
2882	C2	3853	B5	4837	C5		
2887	B3	3854	A2	4838	C5		
2891	D7	3855	A2	4839	C5		
2892	C6	3856	B5	4840	C6		
2893	E8	3857	B5	4841	D7		
3700	D4	3858	A2	4842	C5		
3705	E3	3859	A2	4843	C6		
3706	D3	3860	B2	4844	C6		
3707	D3	3861	B3	4845	B7		
3708	D3	3862	B3	4846	B6		
3709	C3	3863	D4	4847	B6		
3711	D3	3864	B2	4848	B7		
3712	C1	3866	C6	4849	B1		
3713	C7	3867	B3	4876	A3		
3714	D7	3868	C2	6871	E8		
3715	D7	3869	B6	6872	D8		
3716	D4	3870	B6	6873	D8		
3717	D4	3871	E8	6874	C7		
3718	D3	3872	C2	6875	D7		
3727	C3	3873	C3	6876	A3		
3728	C3	3874	C2	6877	B3		
3730	C3	3875	D3	6878	D8		
3731	D3	3876	D3	6879	D3		
3732	D3	3877	E8	7801	C6		
3733	D3	3878	A1	7805	B2		
3734	D4	3879	C8	7812	C7		
3735	C5	3880	C7	7850	A2		
3736	C5	3881	D7	7851	A2		
3740	B3	3882	D8	7860	A2		
3741	B3	3883	C8	7861	A2		
3742	B3	3884	C8	7873	D8		
3743	C3	3885	C8	7874	D3		
3744	B2	3886	D8	7875	B4		
3746	C2	3887	D7	7876	D3		
3750	B2	3888	E8	7877	C4		

3CDC-LC Mainboard Componentside view

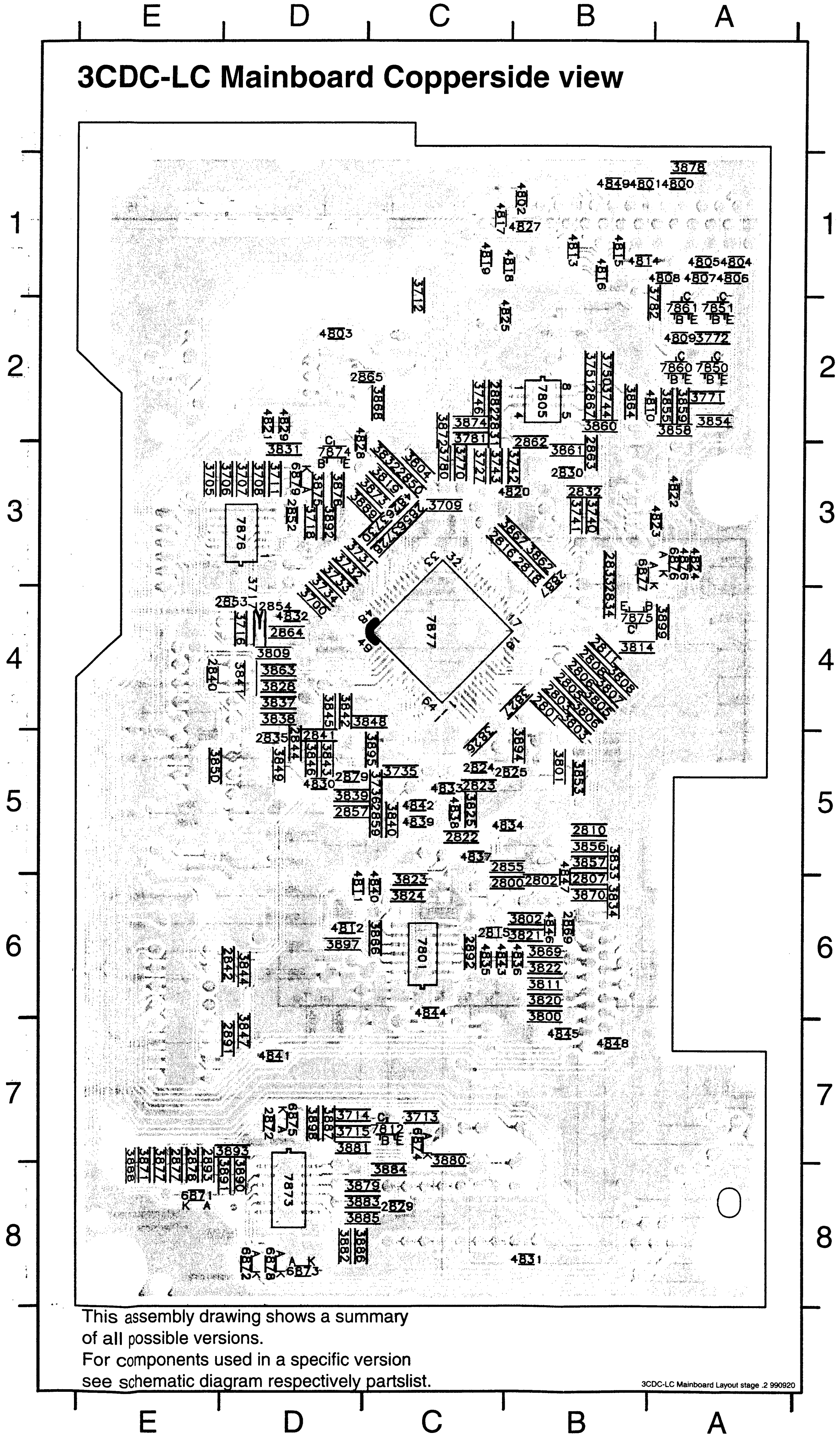

A
B
C
D
E
1
2
3
4
5
6
7
8
1805
1878
5802
1880
1801
1810
1800
1881
1875
7871
7807
7806
2858
2876
2861
2880
2851
2828
2885
2826
2809
2837
2852
2849
2838
3812
2839
3835
2884
2888
3815
3851
2881
2875
2873
3CDC-LC Mainboard Layout stage .2 990920

This assembly drawing shows a summary
of all possible versions.
For components used in a specific version
see schematic diagram respectively partslist.

1800	D1
1801	G1
1810	C10
2800	C4
2801	C5
2802	C4
2803	C5
2805	B5
2806	B5
2807	A4
2808	A5
2809	H4
2810	A4
2811	A5
2815	D5
2816	B12
2818	B11
2822	F9
2823	F10
2824	F10
2825	F9
2826	G12
2828	G13
2833	C10
2834	C10
2835	F7
2837	H4
2838	E8
2839	F4
2840	G4
2841	F5
2842	F5
2844	F5
2849	C1
2850	D14
2851	B11
2855	B4
2856	D15
2857	H5
2859	G5
2869	D3
2879	H5
2884	E8
2885	F9
2887	B10
2888	E5
2891	F4
2892	D5
3709	C14
3727	B12
3728	E14
3735	G6
3736	H6
3800	C4
3801	C4
3802	C4
3803	C4
3804	C14
3805	B4
3806	B4
3807	A4
3808	A4
3811	B4
3812	H4
3815	E5
3819	D14
3820	D3
3821	D3
3822	D3
3823	D8
3824	D8
3825	F9
3826	F9
3827	E10
3828	G10
3832	D15
3833	A4
3834	A4
3835	F5
3837	F7
3838	F7
3839	H6
3840	G5
3841	G5
3842	E5
3843	E5
3844	F5
3845	F5
3846	F5
3847	F5
3848	H6
3849	H5
3850	H5
3852	H5
3853	E9
3856	C1
3857	C2
3862	B10
3863	H13
3866	D8
3867	B11
3869	D3
3870	E3
3873	D14
3889	D15
3892	E15
3894	E9
3895	G12
3897	E7
4811	F8
4812	F8
7801	E7
7806	G4
7807	H4
7877	D12
MP713	C5
MP715	C5
MP716	A5
MP717	A5
MP729	B5
MP730	B5
MP731	B13
MP743	D2
MP744	D2
MP745	E2
MP800	E3
MP802	B15
MP809	E10
MP812	F2
MP813	C3
MP814	F2
MP815	C3
MP816	A3
MP817	A3
MP818	D3
MP819	G9
MP820	F8
MP821	D15
MP827	B10
MP828	G9
MP829	B3
MP837	E3
MP838	G6
MP839	G6
MP840	E6
MP841	F6
MP842	H6
MP843	F6
MP844	E9
MP845	F4
MP846	G1
MP847	G2
MP848	E2
MP849	F2
MP850	F2
MP851	E2
MP852	F2
MP853	F2
MP855	E10
MP858	F9
MP859	F10
MP860	C2
MP861	E8
MP870	D8
MP872	C15
MP873	H4
MP875	G13
MP877	E4
MP878	B13
MP879	B11
MP883	E5
MP884	E5
MP893	F10
MP895	E14
MP896	B12


3CDC-LC-mainboard
part 1
CD Drive
VAM2201
1800
1801
Laser power control HF-Amplifier
TZA1024 / TZA1025
7801
Servo driver
TDA7073A 7806
Motor Driver
TDA7073A 7807
Signal Processor
7877
SAA7324 / SAA7325
To 7805 on part 2
LN LP RN RP
BITSTREAM DAC
SER. DATA INTERFACE
KILL
VERSAT. INTERF.
SER. DATA LOOPBACK INTERF.
MICROCONTROLLER INTERFACE
ADC
PRE-PROCESSING
CONTROL FUNCTION
AUDIO PROCESSOR
VREF GEN.
FRONT END
EFM DEMOD
SRAM ADDR
DIG. PLL
MOTOR CONTROL
VERSATILE INTERFACE
OUTPUT STAGES
ERROR CORR.
PEAK DET.
EBU INTERF.
SUBCODE PROCESSOR
KILL_L
KILL_R
To 3770,3780 on part 2 (Mute)
for basic version
for Coax out versions
PORE
SDA
SICL
SILD
To 1805 on part 2 (µP-Interface)
RCK
SUB
SFSY
SBSY
To 7876 on part 2 (CD-Text IC)
CL11
11.3 MHz
for CD TEXT only
DOBM
to dig. out circuitry on part 2
PIN50 EBUGND
only for digital out versions (Quartz used)
for digital out version: 3863 = 33R
R2 (CD10)
R1 (CD10)
D4 (CD10)
D3 (CD10)
D2 (CD10)
D1 (CD10)
ESD sensitive lines!
U >400mV ->Laser damaged
during Focus search
FOCUS
TRACK
SLIDE
DISC
INNERSW.
Innersw to 7877
Innersw from 1801
for CD_DA : 0V
for CD_RW : 3V
HFOUT
HFIN
EYE-PATTERN
800mVpp
TB = 0.5µs/div
EVM
...DC voltages measured in Play mode
#.... for provision only

3CDC-LC Mainboard Copperside view



This assembly drawing shows a summary
of all possible versions.
For components used in a specific version
see schematic diagram respectively partslist.

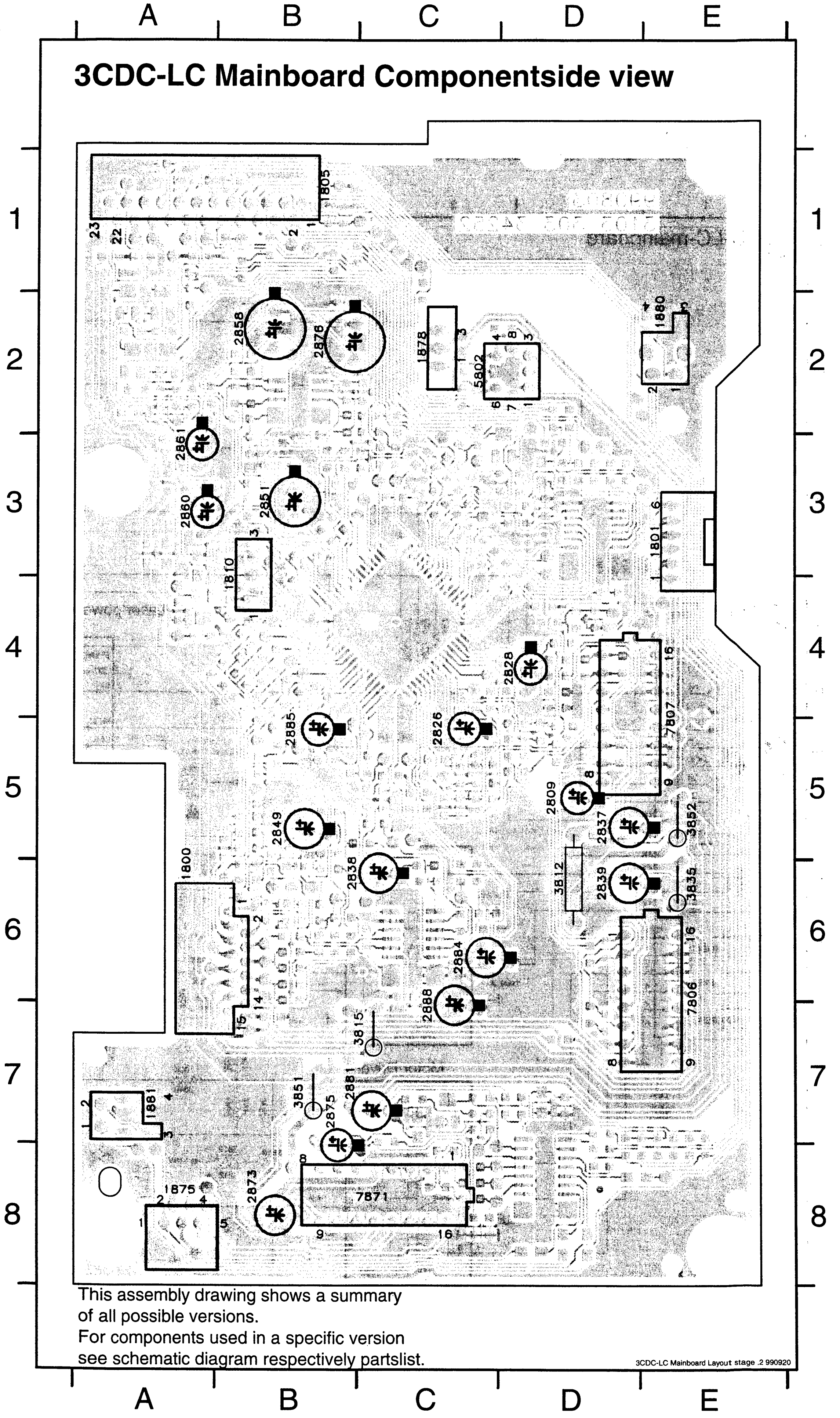
3CDC-LC Mainboard Layout stage .2 990920

Mapping

Copperside	
2800	B6
2801	B4
2802	B6
2803	B4
2805	B4
2806	B4
2807	B6
2808	B4
2810	B5
2811	B4
2815	C6
2816	C3
2818	B3
2822	C5
2823	C5
2824	C5
2825	B5
2829	C8
2830	B3
2831	C2
2832	B3
2833	B3
2834	B4
2835	D5
2840	E4
2841	D5
2842	D6
2844	D5
2850	C3
2852	D3
2853	D4
2854	D4
2855	B5
2856	C3
2857	D5
2859	C5
2862	B3
2863	B3
2864	D4
2865	C2
2867	B2
2869	B6
2872	D7
2877	E8
2878	E8
2879	D5
2882	C2
2887	B3
2891	D7
2892	C6
2893	E8
3700	D4
3705	E3
3706	D3
3707	D3
3708	D3
3709	C3
3711	D3
3712	C1
3713	C7
3714	D7
3715	D7
3716	D4
3717	D4
3718	D3
3727	C3
3728	C3
3730	C3
3731	D3
3732	D3
3733	D3
3734	D4
3735	C5
3736	C5
3740	B3
3741	B3
3742	B3
3743	C3
3744	B2
3746	C2
3750	B2
3751	B2
3770	C3
3771	A2
3772	A2
3780	C3
3781	C2
3782	A2
3800	B6
3801	B5
3802	B6
3803	B4
3804	C3
3805	B4
3806	B4
3807	B4
3808	B4
3809	D4
3811	B6
3814	B4
3819	C3
3820	B6
3821	B6
3822	B6
3823	C6
3824	C6
3825	C5
3826	C5
3827	B4
3828	D4
3831	D3
3832	C3
3833	B5
3834	B6
3837	D4
3838	D4
3839	D5
3840	C5
3841	D4
3842	D4
3843	D5
3844	D6
3845	D4
3846	D5
3847	D7
3848	C4
3849	D5
3850	E5
3853	B5
3854	A2
3855	A2
3856	B5
3857	B5
3858	A2
3859	A2
3860	B2
3861	B3
3862	B3
3863	D4
3864	B2
3866	C6
3867	B3
3868	C2
3869	B6
3870	B6
3871	E8
3872	C2
3873	C3
3874	C2
3875	D3
3876	D3
3877	E8
3878	A1
3879	C8
3880	C7
3881	D7
3882	D8
3883	C8
3884	C8
3885	C8
3886	D8
3887	D7
3888	E8
3889	D3
3890	D8
3891	D8
3892	D3
3893	D7
3894	B5
3895	C5
3897	D6
3898	D7
3899	A4
4800	A1
4801	B1
4802	B1
4803	D2
4804	A1
4805	A1
4806	A1
4807	A1
4808	A1
4809	A2
4810	B2
4811	D6
4812	D6
4813	B1
4814	B1
4815	B1
4816	B1
4817	C1
4818	C1
4819	C1
4820	B3
4821	D2
4822	A3
4823	A3
4824	A3
4825	C2
4826	C3
4827	B1
4828	D3
4829	D2
4830	D5
4831	B8
4832	D4
4833	C5
4834	B5
4835	C6
4836	B6
4837	C5
4838	C5
4839	C5
4840	C6
4841	D7
4842	C5
4843	C6
4844	C6
4845	B7
4846	B6
4847	B6
4848	B7
4849	B1
4876	A3
6871	E8
6872	D8
6873	D8
6874	C7
6875	D7
6876	A3
6877	B3
6878	D8
6879	D3
7801	C6
7805	B2
7812	C7
7850	A2
7851	A2
7860	A2
7861	A2
7873	D8
7874	D3
7875	B4
7876	D3
7877	C4

Componentside	
1800	A6
1801	E3
1805	B1
1810	B3
1875	A8
1878	C2
1880	E2
1881	A7
2809	D5
2826	C5
2828	D4
2837	D5
2838	C6
2839	D6
2849	B5
2851	B3
2858	B2
2860	A3
2861	A3
2873	B8
2875	B7
2876	B2
2881	C7
2884	C6
2885	B5
2888	C7
3812	D6
3815	C7
3835	E6
3851	B7
3852	E5
5802	D2
7806	E6
7807	E5
7871	C8

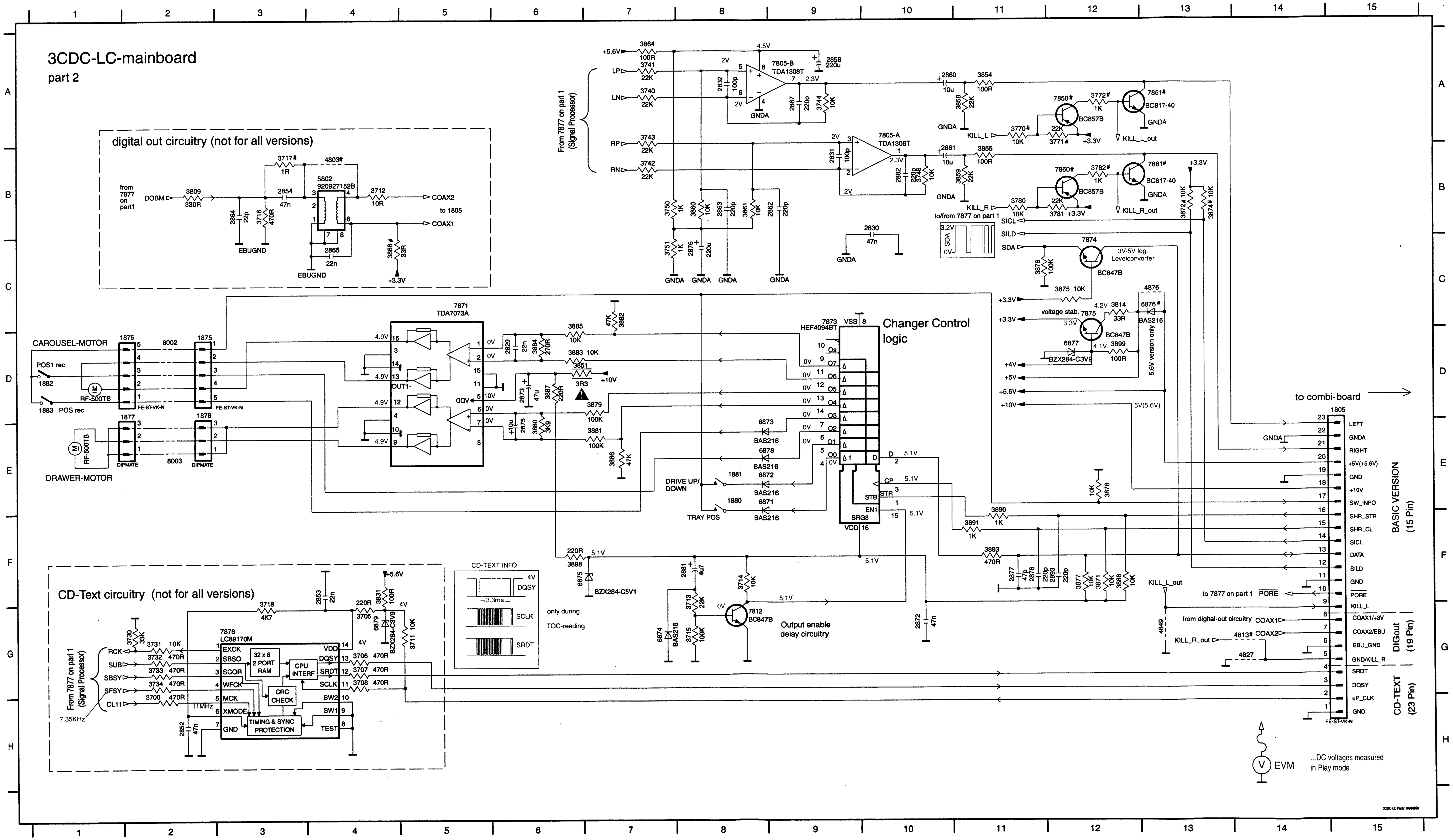
3CDC-LC Mainboard Componentside view



This assembly drawing shows a summary
of all possible versions.
For components used in a specific version
see schematic diagram respectively partslist.

3CDC-LC Mainboard Layout stage .2 990920

1805	D15
1875	D2
1878	D2
1880	E8
1881	E8
2829	D6
2830	B10
2831	B9
2832	A8
2852	H2
2853	F4
2854	B3
2858	A10
2860	A10
2861	B10
2862	B9
2863	B8
2864	B3
2865	C4
2867	A9
2872	G10
2873	D6
2875	E6
2876	C8
2877	F11
2878	F11
2881	F8
2882	B10
2893	F12
3700	H2
3705	G4
3706	G4
3707	G4
3708	G4
3711	G5
3712	B4
3713	F8
3714	F8
3715	G8
3716	B3
3717	B3
3718	G3
3730	G2
3731	G2
3732	G2
3733	G2
3734	G2
3740	A7
3741	A7
3742	B7
3743	A7
3744	A9
3746	B10
3750	B7
3751	C7
3770	A11
3771	A12
3772	A12
3780	B11
3781	B12
3782	B12
3809	B2
3814	C12
3831	F4
3851	D6
3854	A11
3855	B11
3858	A11
3859	B11
3860	B8
3861	B8
3864	A7
3868	C4
3871	F12
3872	B13
3874	B13
3875	C12
3876	C11
3877	F12
3878	E12
3879	D7
3880	E6
3881	E7
3882	C7
3883	D6
3884	D6
3885	C6
3886	E7
3887	D6
3888	F12
3890	F11
3891	F11
3893	F11
3898	F6
3899	D12
4803	B4
4813	G14
4827	G14
4849	G13
4876	C13
5802	B4
6871	E8
6872	E8
6873	E8
6874	G7
6875	F6
6876	C13
6877	D12
6878	E8
6879	G4
7805-A	A10
7805-B	A9
7812	G8
7850	A12
7851	A13
7860	B12
7861	B13
7871	C5
7873	C9
7874	C12
7875	C12
7876	G3
MP721	C8
MP722	E8
MP723	C8
MP724	D8
MP725	D8
MP726	D8
MP740	H14
MP741	G14
MP742	G14
MP801	D12
MP803	F10
MP804	G14
MP805	E13
MP806	F13
MP807	F14
MP808	E13
MP810	F13
MP811	F13
MP822	E3
MP823	D3
MP824	D4
MP825	D4
MP830	A9
MP832	G9
MP833	F13
MP834	G14
MP835	F14
MP854	A13
MP856	E14
MP857	B13
MP862	G13
MP863	C11
MP865	D11
MP866	E8
MP867	E8
MP868	F8
MP869	C12
MP871	D6
MP874	D12
MP881	G2
MP882	G2
MP886	G3
MP887	H5
MP888	G5
MP889	G5
MP890	B3
MP891	B5
MP892	B5
MP897	D12
MP898	D13
MP899	E14

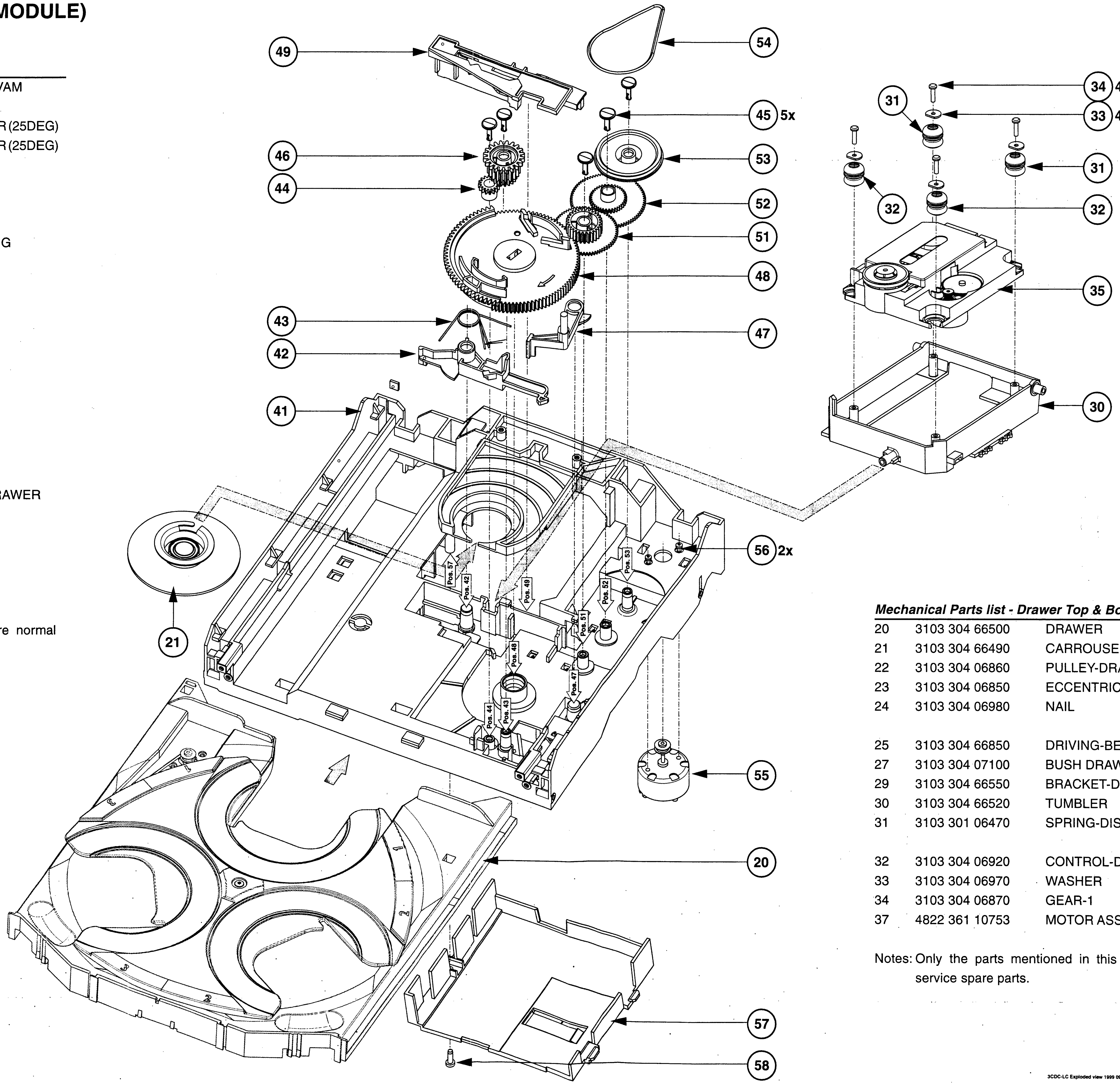

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
A B C D E F G H
3CDC-LC-mainboard
part 2
digital out circuitry (not for all versions)
from 7877 on part1
DOBM
3809 330R
2864 22p
3716 470R
3717# 1R
2854 47n
4803#
5802 920927152B
3712 10R
COAX2
to 1805
COAX1
EBUGND
2865 22n
3868# 33R
+3.3V
From 7877 on part 1 (Signal Processor)
+5.6V
3864 100R
LP
3741 22K
LN
3740 22K
RP
3743 22K
RN
3742 22K
4.5V
2V
7805-B TDA1308T
2.3V
2858 220u
2832 100p
2867 220p
3744 10K
GNDA
7805-A TDA1308T
2831 100p
2882 220p
3746 10K
3750 1K
3860 10K
2863 220p
3861 1K
2862 220p
3751 1K
2876 220u
2830 47n
2860 10u
3854 100R
3858 22K
2861 10u
3855 100R
3859 22K
KILL_L
3770# 10K
3771# +3.3V
7850# BC857B
3772# 1K
7851# BC817-40
KILL_L_out
KILL_R
to/from 7877 on part 1
3780 10K
3781 +3.3V
7860# BC857B
3782# 1K
7861# BC817-40
KILL_R_out
3872# 10K
3874# 10K
SICL
SILD
SDA
3.2V
0V
7874
3876 100K
BC847B
3V-5V log. Levelconverter
3875 10K
+3.3V
voltage stab. 7875
4.2V 3814 33R
3.3V
6876# BAS216
4876
BC847B
6877 BZX284-C3V9
4.1V 3899 100R
5.6V version only
+4V +5V +5.6V +10V
5V(5.6V)
7871 TDA7073A
CAROUSEL-MOTOR
1876
8002
1875
FE-ST-VK-N
POS1 rec
1882
M
RF-500TB
1883 POS rec
1877
1878
DIPMATE
8003
DRAWER-MOTOR
4.9V
OUT1-
VDD
0V
2829 22n
3884 270R
3885 10K
3882 47K
3883 10K
3851 3R3
+10V
2873 47u
3887 220R
3879 100K
2875 10u
3880 3K9
3881 100K
3886 47K
7873 HEF4094BT
VSS 8
Changer Control logic
Qs
O7 O6 O5 O4 O3 O2 O1 O0
6873 BAS216
6878 BAS216
6872 BAS216
6871 BAS216
DRIVE UP/ DOWN
1881
1880
TRAY POS
STB
CP
STR
EN1
SRG8
VDD 16
D 5.1V
5.1V
3890 1K
3891 1K
3893 470R
2877 47p
2878 220p
2893 220p
3877 10K
3871 10K
3888 10K
3878 10K
220R 3898
5.1V
6875 BZX284-C5V1
2881 4u7
3713 22K
3714 10K
3715 100K
6874 BAS216
6V
7812 BC847B
Output enable delay circuitry
2872 47n
KILL_L_out
to 7877 on part 1 PORE
4849
from digital-out circuitry COAX1
4813# COAX2
KILL_R_out
4827
to combi-board
1805
LEFT GNDA RIGHT +5V(+5.6V) GND +10V SW_INFO SHR_STR SHR_CL SICL DATA SILD GND PORE KILL_L COAX1/+3V COAX2/EBU EBU_GND GND/KILL_R SRDT DQSY uP_CLK GND
BASIC VERSION (15 Pin)
DIGout (19 Pin)
CD-TEXT (23 Pin)
CD-Text circuitry (not for all versions)
From 7877 on part 1 (Signal Processor)
RCK SUB SBSY SFSY CL11
7.35KHz
3730 33K
3731 10K
3732 470R
3733 470R
3734 470R
3700 470R
11MHz
2852 47n
3718 4K7
7876 LC89170M
EXCK SBSO SCOR WFCK MCK XMODE GND
32 x 8 2 PORT RAM
CPU INTERF
CRC CHECK
TIMING & SYNC PROTECTION
VDD DQSY SRDT SCLK SW2 SW1 TEST
2853 22n
220R 3705
6879 BZX284-C3V9
3831 100R
+5.6V
4V
3711 10K
3706 470R
3707 470R
3708 470R
CD-TEXT INFO
4V
DQSY
3.3ms
SCLK
SRDT
only during TOC-reading
V EVM
...DC voltages measured in Play mode

EXPLODED VIEW (3CDC-LC MODULE)

Mechanical Parts List - 3CDC-LC Module

21	314011758650	CLAMPER ASSY-VAM
30	310330466560	SUPPORT
31	482252910431	DAMPER - RUBBER (25DEG)
32	482252910431	DAMPER - RUBBER (25DEG)
33	310330406970	WASHER
35	482269110772	VAM2201/01
41	310330466480	FRAME
42	310330466540	BRACKET-GUIDING
43	310330106460	SPRING-GUIDING
44	310330406890	GEAR-3
45	310330406980	NAIL
46	310330406880	GEAR-2
47	310330466530	BRACKET-LOAD
48	310330406910	CAM
49	310330466510	GUIDING
51	310330406900	GEAR-4
52	310330406870	GEAR-1
53	310330406960	PULLEY-FRAME
54	310330466910	DRIVING-BELT-DRAWER
55	482236110753	MOTOR ASSY
56	482250212548	SCREW M2,6X2,9
57	310330468890	COVER-VAM
59	482246612146	RUBBER

Notes: Only the parts mentioned in this list are normal service spare parts.



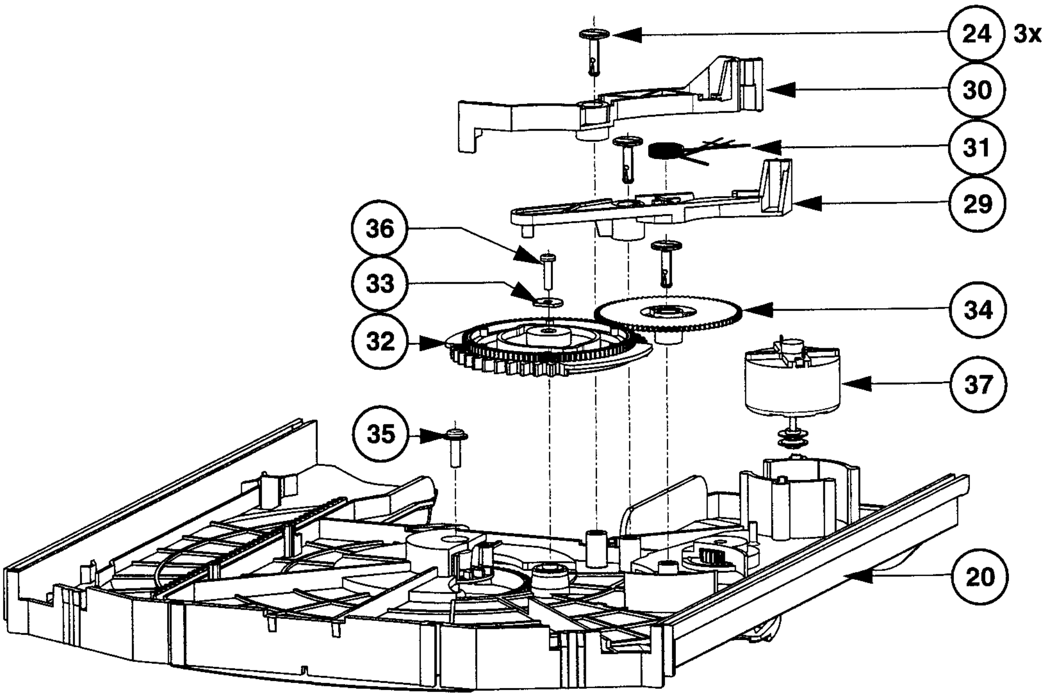
Mechanical Parts list - Drawer Top & Bottom view

20	3103 304 66500	DRAWER
21	3103 304 66490	CARROUSELL
22	3103 304 06860	PULLEY-DRAWER
23	3103 304 06850	ECCENTRIC
24	3103 304 06980	NAIL
25	3103 304 66850	DRIVING-BELT
27	3103 304 07100	BUSH DRAWER
29	3103 304 66550	BRACKET-DISC
30	3103 304 66520	TUMBLER
31	3103 301 06470	SPRING-DISC
32	3103 304 06920	CONTROL-DISC
33	3103 304 06970	WASHER
34	3103 304 06870	GEAR-1
37	4822 361 10753	MOTOR ASSY

Notes: Only the parts mentioned in this list are normal service spare parts.

3CDC-LC Exploded view 1999 09 13

Drawer bottom view


24
3x
30
31
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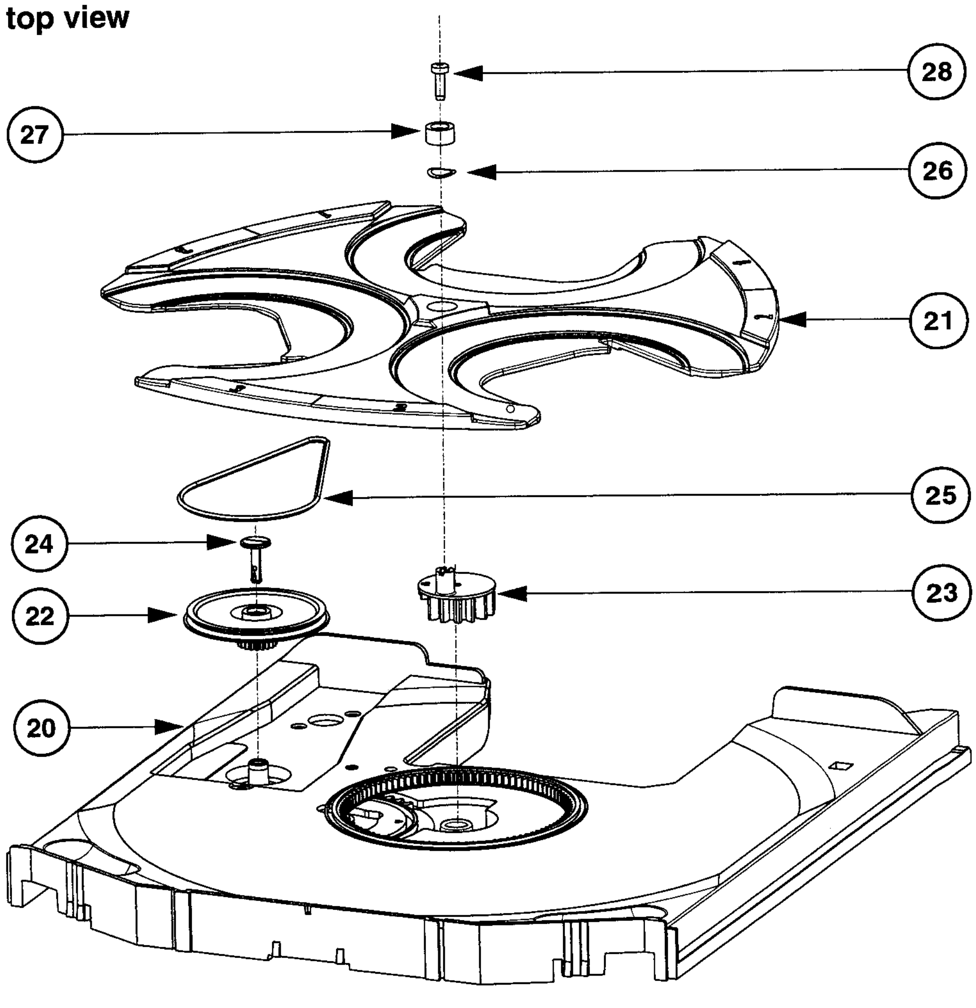
36
33
34
32
37
35
20

Drawer top view


28
27
26
21
25
24
23
22
20

3CD¼C Drawer assy 1999 09 13

ELECTRICAL PARTS LIST - 3CDC-LC MODULE

MISCELLANEOUS

1800	482226510925	Flex Foil Connector 15P
1805	482226510979	Flex Foil Connector 15P
1805	482226511545	Flex Foil Connector 19P
1805	482226511182	Flex Foil Connector 23P
1810	482224210849	RES XTL 8MHz4672
1810	482224273557	RES CER 8MHz467
1875	482226710958	Flex Foil Connector 5P
1876	242202508332	Flex Foil Connector 5P
1880	482227613503	Switch
1881	482227613503	Switch
1882	482227613503	Switch
1883	482227613503	Switch
8002	310330891990	Flex Foil 5P 200mm
8005	310330891980	Flex Foil 15P 170mm

CAPACITORS

2800	482212610326	180pF 5% 63V
2801	482212233575	220pF 5% 63V
2802	482212610326	180pF 5% 63V
2803	482212233575	220pF 5% 63V
2805	482212233575	220pF 5% 63V
2806	482212233575	220pF 5% 63V
2807	532212231863	330pF 5% 63V
2808	482212233575	220pF 5% 63V
2809	532212441948	470nF 20% 50V
2810	482212610326	180pF 5% 63V
2811	482212233575	220pF 5% 63V
2815	482212614076	220nF +80/-20% 25V
2816	482212613344	1,5nF 5% 63V
2818	482212613344	1,5nF 5% 63V
2822	222286115222	2,2nF 5% 50V
2823	482212613692	47pF 1% 63V
2824	482212613751	47nF 10% 63V
2825	482212233177	10nF 20% 50V
2826	482212412362	47µF 20% 4V
2828	482212412362	47µF 20% 4V
2829	532212232654	22nF 10% 63V
2830	482212613751	47nF 10% 63V
2831	532212232531	100pF 5% 50V
2832	532212232531	100pF 5% 50V
2833	532212232659	33pF 5% 50V
2834	532212232659	33pF 5% 50V
2835	482212613751	47nF 10% 63V
2837	482212440433	47µF 20% 25V
2838	482212440248	10µF 20% 63V
2839	482212440433	47µF 20% 25V
2840	482212614585	100nF 10% 50V
2841	482212233216	270pF 5% 50V
2842	482212233127	2,2nF 10% 63V
2844	482212233216	270pF 5% 50V
2849	482212440769	4,7µF 20% 100V
2850	532212231647	1nF 10% 63V
2851	482212442383	220µF 20% 4V
2852	482212613751	47nF 10% 63V
2853	532212232654	22nF 10% 63V
2854	482212613751	47nF 10% 63V
2855	532212234099	470pF 10% 63V
2856	482212613691	27pF 1% 63V
2857	482212233177	10nF 20% 50V
2858	482212412245	220µF 20%
2859	482212233177	10nF 20% 50V
2860	482212411947	10µF 20% 16V
2861	482212411947	10µF 20% 16V
2862	482212233575	220pF 5% 63V
2863	482212233575	220pF 5% 63V
2864	532212232658	22pF 5% 50V
2865	532212232654	22nF 10% 63V
2867	482212233575	220pF 5% 63V
2869	482212613751	47nF 10% 63V
2872	482212613751	47nF 10% 63V
2873	482212480231	47µF 20% 16V
2875	482212411947	10µF 20% 16V
2876	482212412245	220µF 20%
2877	482212613692	47pF 1% 63V
2878	482212233575	220pF 5% 63V
2879	482212613751	47nF 10% 63V
2881	482212440769	4,7µF 20% 100V
2882	482212233575	220pF 5% 63V
2884	482212440769	4,7µF 20% 100V
2885	482212440769	4,7µF 20% 100V
2887	482212614585	100nF 10% 50V
2888	482212440769	4,7µF 20% 100V
2891	532212231865	1,5nF 10% 63V
2892	532212610223	4,7nF 10% 63V
2893	482212233575	220pF 5% 63V

RESISTORS

3700	482205120471	470R 5% 0,1W
3705	482211711503	220R 1% 0,1W
3706	482205120471	470R 5% 0,1W
3707	482205120471	470R 5% 0,1W
3708	482205120471	470R 5% 0,1W
3709	482205120108	1R 5% 0,1W
3711	482211710833	10k 1% 0,1W
3712	482205120109	10R 5% 0,1W
3713	482205120223	22k 5% 0,1W
3714	482211710833	10k 1% 0,1W
3715	482211710837	100k 1% 0,1W
3716	482205120471	470R 5% 0,1W
3718	482205120472	4k7 5% 0,1W
3727	482205120472	4k7 5% 0,1W
3728	482205120472	4k7 5% 0,1W
3730	482205120333	33k 5% 0,1W
3731	482211710833	10k 1% 0,1W

ELECTRICAL PARTS LIST - 3CDC-LC MODULE

RESISTORS

3732	482205120471	470R 5% 0,1W
3733	482205120471	470R 5% 0,1W
3734	482205120471	470R 5% 0,1W
3740	482205120223	22k 5% 0,1W
3741	482205120223	22k 5% 0,1W
3742	482205120223	22k 5% 0,1W
3743	482205120223	22k 5% 0,1W
3744	482211710833	10k 1% 0,1W
3746	482211710833	10k 1% 0,1W
3750	482205110102	1k 2% 0,25W
3751	482205110102	1k 2% 0,25W
3800	482211711148	56k 1% 0,1W
3801	482211710833	10k 1% 0,1W
3802	482211711148	56k 1% 0,1W
3803	482211710833	10k 1% 0,1W
3804	482211710833	10k 1% 0,1W
3805	482211710833	10k 1% 0,1W
3806	482211710833	10k 1% 0,1W
3807	482211710833	10k 1% 0,1W
3808	482211710833	10k 1% 0,1W
3809	482211713577	330R 1% 1,25W
3811	482211710965	18k 1% 0,1W
3812	482205310228	2R2 5% 1W
3814	482205120339	33R 5% 0,1W
3815	482205210478	⚠ 4R7 5% 0,33W
3819	482205120471	470R 5% 0,1W
3820	482205120472	4k7 5% 0,1W
3821	482205120472	4k7 5% 0,1W
3822	482211712955	2k7 1% 0,1W
3823	482205110102	1k 2% 0,25W
3824	482205110102	1k 2% 0,25W
3825	482205110102	1k 2% 0,25W
3826	482205120223	22k 5% 0,1W
3827	482205120333	33k 5% 0,1W
3828	482205120223	22k 5% 0,1W
3831	482205120101	100R 5% 0,1W
3832	482211710833	10k 1% 0,1W
3833	482205120223	22k 5% 0,1W
3834	482205120223	22k 5% 0,1W
3835	482205210338	⚠ 3R3 5% 0,33W
3837	482205110102	1k 2% 0,25W
3838	482205110102	1k 2% 0,25W
3839	482211710837	100k 1% 0,1W
3840	482211710837	100k 1% 0,1W
3841	482205120472	4k7 5% 0,1W
3842	482211710834	47k 1% 0,1W
3843	482205120333	33k 5% 0,1W
3844	482205120472	4k7 5% 0,1W
3845	482211710834	47k 1% 0,1W
3846	482205120333	33k 5% 0,1W
3847	482211711507	6k8 1% 0,1W
3848	482211710837	100k 1% 0,1W
3849	482211710837	100k 1% 0,1W
3850	482205120392	3k9 5% 0,1W
3851	482205210338	⚠ 3R3 5% 0,33W
3852	482205210228	⚠ 2R2 5% 0,33W
3853	482205120471	470R 5% 0,1W
3854	482205120101	100R 5% 0,1W
3855	482205120101	100R 5% 0,1W
3856	482211712521	68R 1% 0,1W
3857	482211712521	68R 1% 0,1W
3858	482205120223	22k 5% 0,1W
3859	482205120223	22k 5% 0,1W
3860	482211710833	10k 1% 0,1W
3861	482211710833	10k 1% 0,1W
3862	482205120121	120R 5% 0,1W
3863	482205120101	100R 5% 0,1W
3863	482205120339	33R 5% 0,1W
3864	482205120101	100R 5% 0,1W
3866	482211710833	10k 1% 0,1W
3867	482205120121	120R 5% 0,1W
3869	482205120478	4R7 5% 0,1W
3870	482205120101	100R 5% 0,1W
3871	482211710833	10k 1% 0,1W
3873	482205120471	470R 5% 0,1W
3875	482211710833	10k 1% 0,1W
3876	482211710837	100k 1% 0,1W
3877	482211710833	10k 1% 0,1W
3878	482211710833	10k 1% 0,1W
3879	482211710837	100k 1% 0,1W
3880	482205120392	3k9 5% 0,1W
3881	482211710837	100k 1% 0,1W
3882	482211710834	47k 1% 0,1W
3883	482211710833	10k 1% 0,1W
3884	482211711504	270R 1% 0,1W
3885	482211710833	10k 1% 0,1W
3886	482211710834	47k 1% 0,1W
3887	482211711503	220R 1% 0,1W
3888	482211710833	10k 1% 0,1W
3889	482205120471	470R 5% 0,1W
3890	482205110102	1k 2% 0,25W
3891	482205110102	1k 2% 0,25W
3892	482205120471	470R 5% 0,1W
3893	482205120471	470R 5% 0,1W
3894	482205120101	100R 5% 0,1W
3895	482205120159	15R 5% 0,1W
3897	482205120101	100R 5% 0,1W
3898	482211711503	220R 1% 0,1W
3899	482205120101	100R 5% 0,1W
4800	482205120008	0R Jumper 0805
4801	482205120008	0R Jumper 0805
4802	482205120008	0R Jumper 0805
4804	482205120008	0R Jumper 0805
4805	482205120008	0R Jumper 0805
4806	482205120008	0R Jumper 0805
4807	482205120008	0R Jumper 0805

ELECTRICAL PARTS LIST - 3CDC-LC MODULE

RESISTORS

4808	482205120008	0R Jumper 0805
4810	482205120008	0R Jumper 0805
4812	482205120008	0R Jumper 0805
4817	482205120008	0R Jumper 0805
4818	482205120008	0R Jumper 0805
4819	482205120008	0R Jumper 0805
4820	482205120008	0R Jumper 0805
4821	482205120008	0R Jumper 0805
4822	482205120008	0R Jumper 0805
4823	482205120008	0R Jumper 0805
4824	482205120008	0R Jumper 0805
4825	482205120008	0R Jumper 0805
4826	482205120008	0R Jumper 0805
4827	482205120008	0R Jumper 0805
4828	482205120008	0R Jumper 0805
4830	482205120008	0R Jumper 0805
4831	482205120008	0R Jumper 0805
4832	482205120008	0R Jumper 0805
4833	482205120008	0R Jumper 0805
4834	482205120008	0R Jumper 0805
4835	482205120008	0R Jumper 0805
4836	482205120008	0R Jumper 0805
4837	482205120008	0R Jumper 0805
4838	482205120008	0R Jumper 0805
4839	482205120008	0R Jumper 0805
4840	482205120008	0R Jumper 0805
4841	482205120008	0R Jumper 0805
4842	482205120008	0R Jumper 0805
4843	482205120008	0R Jumper 0805
4844	482205120008	0R Jumper 0805
4845	482205120008	0R Jumper 0805
4846	482205120008	0R Jumper 0805
4847	482205120008	0R Jumper 0805
4848	482205120008	0R Jumper 0805
4849	482205120008	0R Jumper 0805
4876	482205120008	0R Jumper 0805

COILS & FILTERS

5802	482215631058	100µH

DIODES

6871	482213083757	BAS216
6872	482213083757	BAS216
6873	482213083757	BAS216
6874	482213083757	BAS216
6875	482213011383	BZX284-C5V1
6877	482213011366	BZX284-C3V9
6878	482213083757	BAS216
6879	482213011366	BZX284-C3V9

TRANSISTORS & INTEGRATED CIRCUITS

7801	935262236118	IC SM TZA1025T/V2
7805	482220933165	TDA1308T/N1
7806	482220932852	TDA7073A/N2
7807	482220932852	TDA7073A/N2
7812	482213060511	BC847B
7871	482220932852	TDA7073A/N2
7873	532220911306	HEF4094BT
7874	482213060511	BC847B
7875	482213060511	BC847B
7876	482220916143	LC89170M
7877	482220917324	SAA7325H

Note: Only the parts mentioned in this list are normal service spare parts.

POWER 5 DVD Module

(Include Mains Board)

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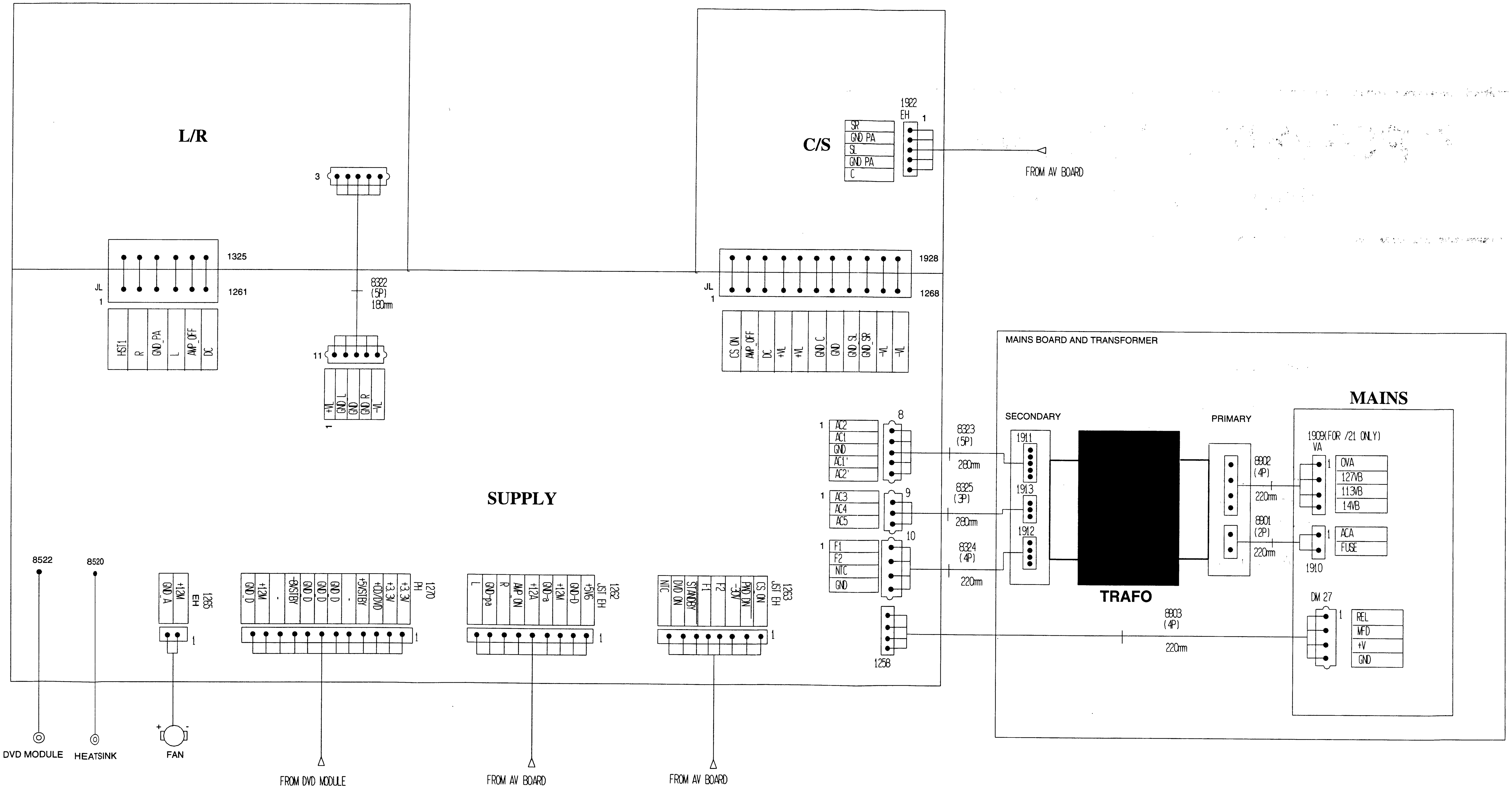
NOTES

WIRING DIAGRAM


L/R
3
1325
JL
1
1261
HST1
R
GND_PA
L
AMP_OFF
DC
8322
(5P)
180mm
11
+VL
GND_L
GND
GND_R
-VL
1
C/S
1922
EH
1
SR
GND PA
SL
GND PA
C
FROM AV BOARD
1928
JL
1
1268
CS_ON
AMP_OFF
DC
+VL
+VL
GND_C
GND
GND_SL
GND_SR
-VL
-VL
SUPPLY
1
AC2
AC1
GND
AC1'
AC2'
8
1
AC3
AC4
AC5
9
10
1
F1
F2
NTC
GND
1258
8323
(5P)
280mm
8325
(3P)
280mm
8324
(4P)
220mm
8522
8520
1265
EH
+12M
GND_A
1
1270
PH
+3.3V
+3.3V
+CD/DVD
+5VSTBY
-
GND_D
GND_D
GND_D
-8VSTBY
-
+12M
GND_D
1
1262
JST EH
+5V6
GND-D
+12M
GND-a
+12A
AMP_ON
R
GND-pa
L
1
1263
JST EH
CS_ON
PWD_DN
-30V
F2
F1
STANDBY
DVD ON
NTC
1
DVD MODULE
HEATSINK
+
-
FAN
FROM DVD MODULE
FROM AV BOARD
FROM AV BOARD
MAINS BOARD AND TRANSFORMER
SECONDARY
1911
1913
1912
TRAFO
PRIMARY
8902
(4P)
220mm
8901
(2P)
220mm
MAINS
1909(FOR /21 ONLY)
VA
1
OVA
127VB
113VB
14VB
1
ACA
FUSE
1910
DM 27
1
REL
MFD
+V
GND
8903
(4P)
220mm

MAINS BOARD - COMPONENT VIEW

Interconnection Board

primary side

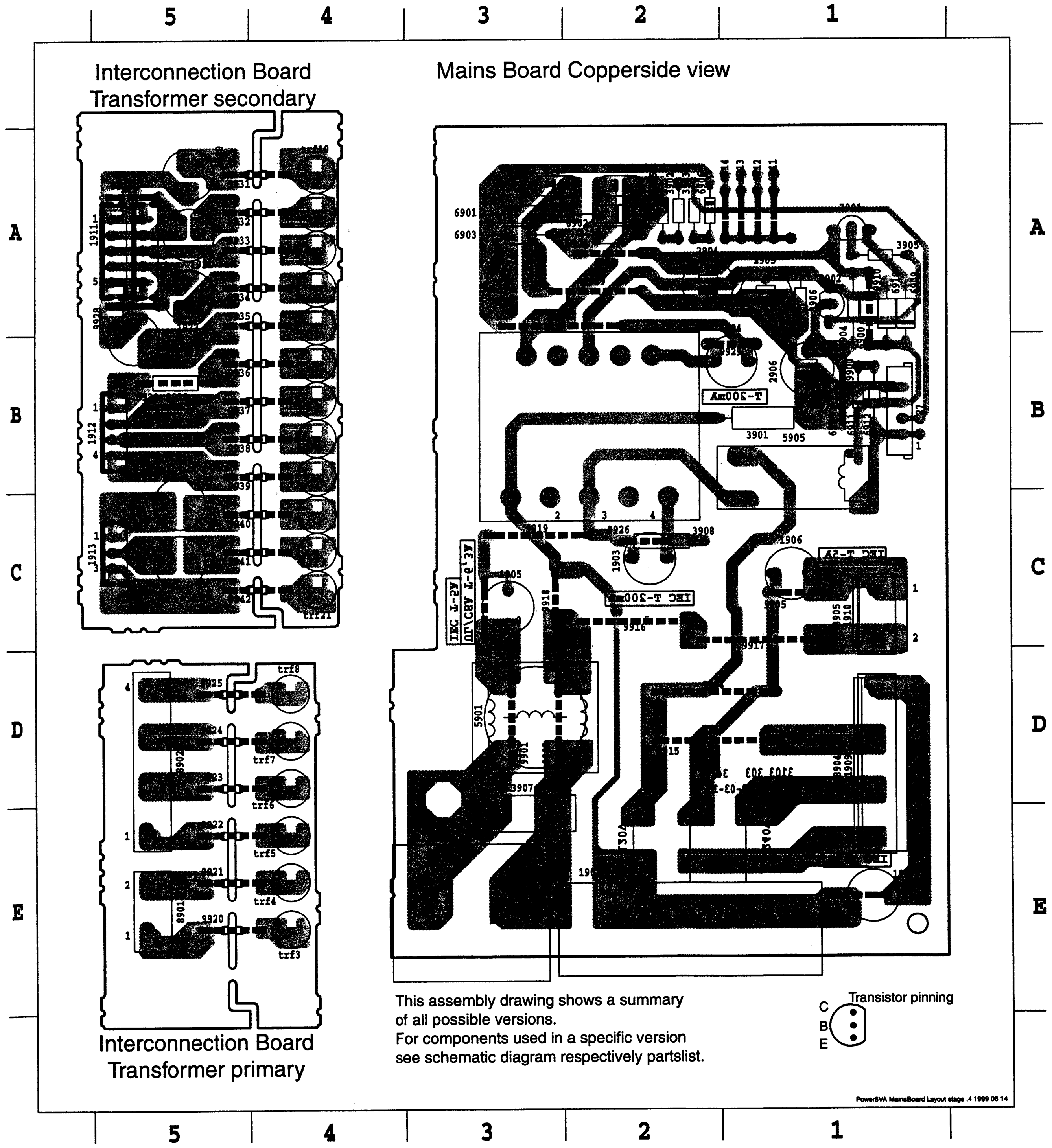
8901 E 5
8902 D 5
9920 E 4
9921 E 4
9922 E 4
9923 D 4
9924 D 4
9925 D 4
trf3 E 4
trf4 E 4
trf5 E 4
trf6 D 4
trf7 D 4
trf8 D 4

secondary side

1911 A 5
1912 B 5
1913 C 5
1914 A 5
1920 A 4
1921 A 4
1922 A 4
1923 B 5
1924 C 4
1925 C 4
3920 B 4
9927 A 5
9928 A 5
9930 B 4
9931 A 4
9932 A 4
9933 A 4
9934 A 4
9935 B 4
9936 B 4
9937 B 4
9938 B 4
9939 C 4
9940 C 4
9941 C 4
9942 C 4
trf10 A 3
trf11 A 3
trf12 A 3
trf13 A 3
trf14 B 3
trf15 B 3
trf16 B 3
trf17 B 3
trf18 C 3
trf19 C 3
trf20 C 3
trf21 C 3

Mains Board

27 B 1
1901 E 3
1902 E 2
1903 C 2
1904 B 2
1905 C 3
1906 C 1
1907 E 1
1909 D 1
1910 C 1
2902 A 3
2903 A 2
2904 A 2
2905 A 1
2906 B 1
3901 B 1
3902 A 2
3903 A 2
3904 B 1
3905 A 1
3906 A 1
3907 E 3
3908 C 2
5901 D 3
5902 D 3
5903 B 2
5905 C 1
6900 B 1
6901 A 3
6902 A 2
6903 A 3
6904 A 2
6905 A 2
6906 A 2
6908 B 1
6909 B 1
6910 B 1
6911 B 1
6912 B 1
7901 A 1
7902 B 1
8904 D 1
8905 C 1
9900 B 1
9901 D 3
9902 D 3
9903 C 3
9904 D 2
9905 C 1
9906 E 1
9907 B 3
9908 A 2
9909 A 2
9910 B 1
9911 A 1
9912 A 1
9913 A 2
9914 A 2
9915 D 2
9916 D 2
9917 D 1
9918 C 3
9919 C 3
9926 C 2
9929 B 2

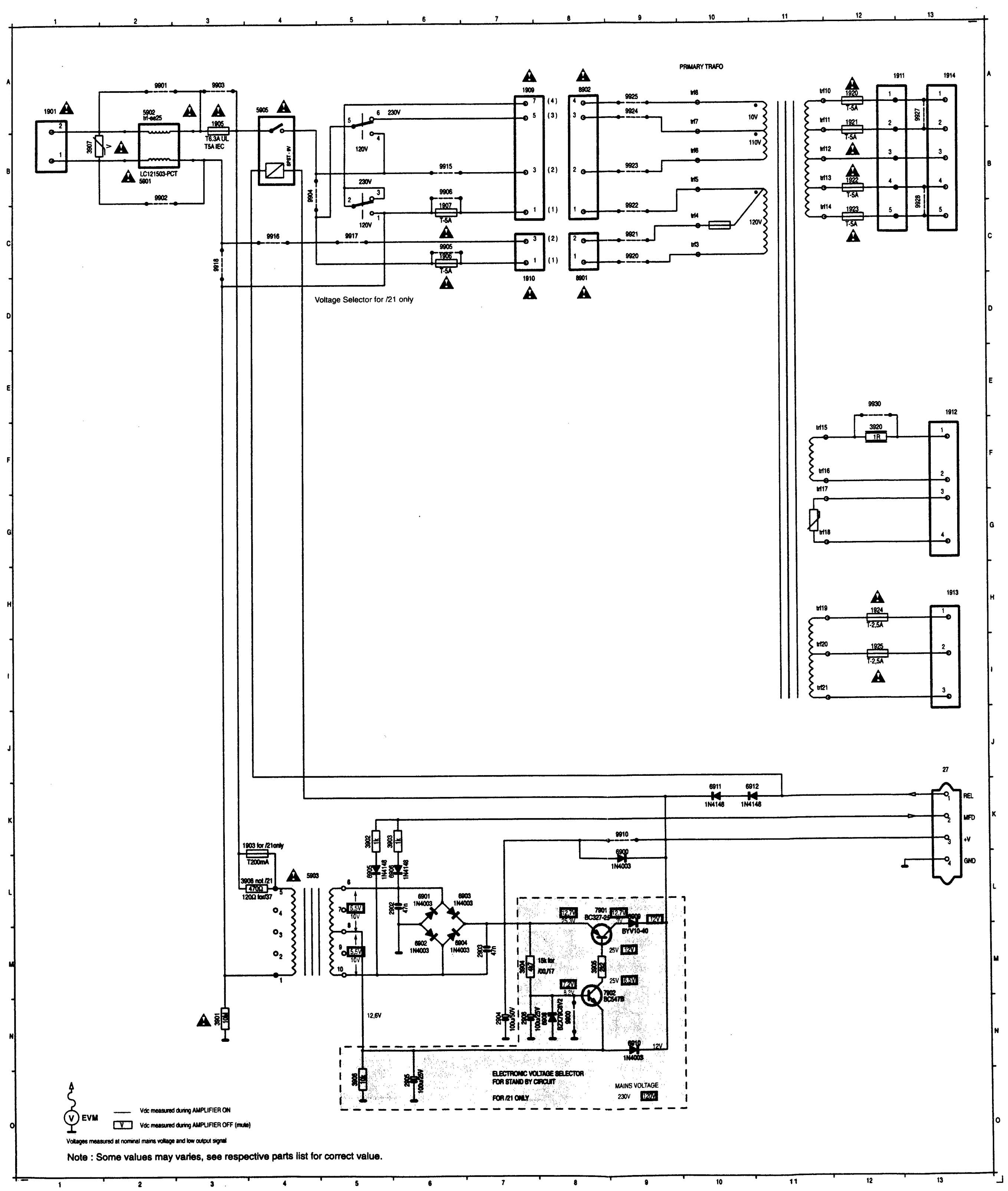

5
4
3
2
1
A
B
C
D
E
Interconnection Board
Transformer secondary
Mains Board Copperside view
Interconnection Board
Transformer primary
1911
1912
1913
5928
trf21
trf8
trf7
trf6
trf5
trf4
trf3
8902
8901
9920
6901
6903
3901
5905
5901
3907
1906
1903
3908
9926
IEC T-2A
IEC T-200mA
T-200mA
PowerSVA MainsBoard Layout stage .4 1999 08 14

This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram respectively partslist.

Transistor pinning
C
B
E

MAINS BOARD - CIRCUIT DIAGRAM

27 J13
1901 A 1
1903 L4
1905 A 3
1906 C 6
1907 C 6
1909 A 7
1910 D 7
1911 A13
1912 E13
1913 H13
1914 A13
1920 A12
1921 A12
1922 B12
1923 C12
1924 H12
1925 I12
2902 L 6
2903 M 7
2904 N 7
2905 N 6
2906 N 7
3901 N 3
3902 K 5
3903 K 6
3904 M 7
3905 M 8
3906 N 5
3907 B 1
3908 L 4
3920 F12
5901 B 2
5902 A 2
5903 L 4
5905 A 4
6900 K 9
6901 L 6
6902 M 6
6903 L 7
6904 M 6
6905 L 5
6906 L 5
6908 N 8
6909 L 9
6910 N 9
6911 K10
6912 K11
7901 L 8
7902 M 8
8901 D 8
8902 A 8
9900 N 8
9901 A 2
9902 B 2
9903 A 3
9904 B 4
9905 C 6
9906 B 6
9910 K 9
9911 F 1
9912 G 1
9913 G 1
9914 G 1
9915 B 6
9916 C 4
9917 C 5
9918 C 3
9920 C 9
9921 C 9
9922 C 9
9923 B 9
9924 A 9
9925 A 9
9927 A13
9928 C13
9930 E12
trf10 A11
trf11 A11
trf12 B11
trf13 B11
trf14 C11
trf15 F12
trf16 F11
trf17 G12
trf18 G11
trf19 H11
trf20 I11
trf21 I11
trf3 C10
trf4 C10
trf5 B10
trf6 B10
trf7 A10
trf8 A10

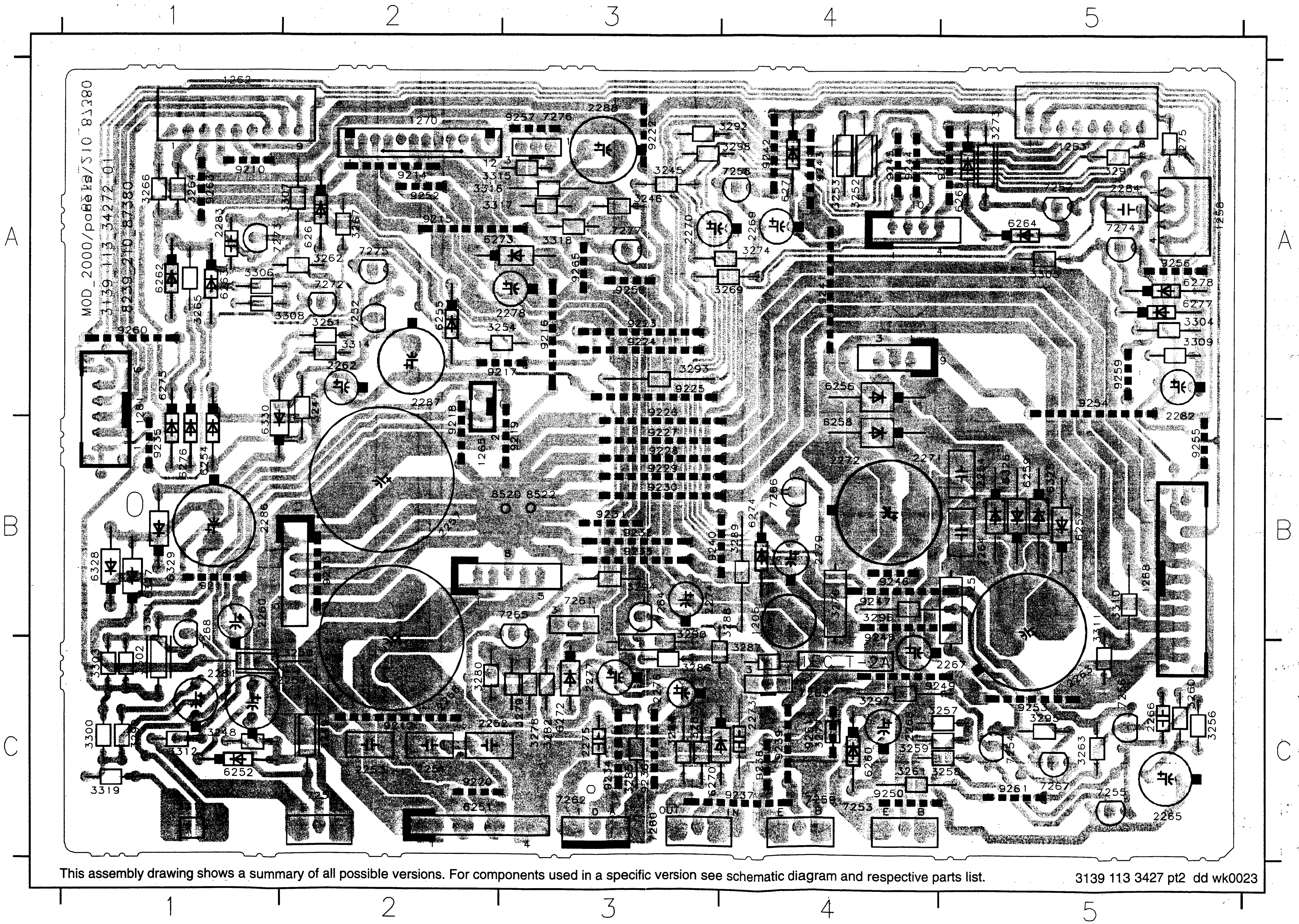

1
2
3
4
5
6
7
8
9
10
11
12
13
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
1901
3907
5902
trf-ee25
LC121503-PCT
5901
9901
9903
9902
1905
T6.3A UL
T5A IEC
5905
SPST - 9V
9904
9916
9917
9918
230V
120V
9915
9906
1907
T-5A
9905
1906
1909
1910
8902
8901
PRIMARY TRAFO
9925
9924
9923
9922
9921
9920
trf8
trf7
trf6
trf5
trf4
trf3
10V
110V
120V
trf10
trf11
trf12
trf13
trf14
1920
1921
1922
1923
1911
1914
9927
9928
9930
3920
1R
1912
trf15
trf16
trf17
trf18
1913
trf19
trf20
trf21
1924
1925
T-2,5A
27
REL
MFD
+V
GND
6911
6912
1N4148
9910
6900
1N4003
1903 for /21only
T200mA
3908 not /21
120Ω for/37
5903
3902
3903
6901
6902
6903
6904
6905
6906
2902
2903
7901
BC327-40
BYV10-40
7902
BC547B
25V
12,6V
3901
10M
3904
4k7
3905
10k
2904
100u/50V
2906
100u/25V
6908
BZX79C8V2
9900
6910
1N4003
12V
8,3V
7,2V
6,5V
ELECTRONIC VOLTAGE SELECTOR
FOR STAND BY CIRCUIT
FOR /21 ONLY
MAINS VOLTAGE
230V
120V
3906
2905
100u/25V
EVM
Vdc measured during AMPLIFIER ON
Vdc measured during AMPLIFIER OFF (mute)
Voltages measured at nominal mains voltage and low output signal

Voltage Selector for /21 only

Note : Some values may varies, see respective parts list for correct value.

SUPPLY PART - COMPONENT VIEW

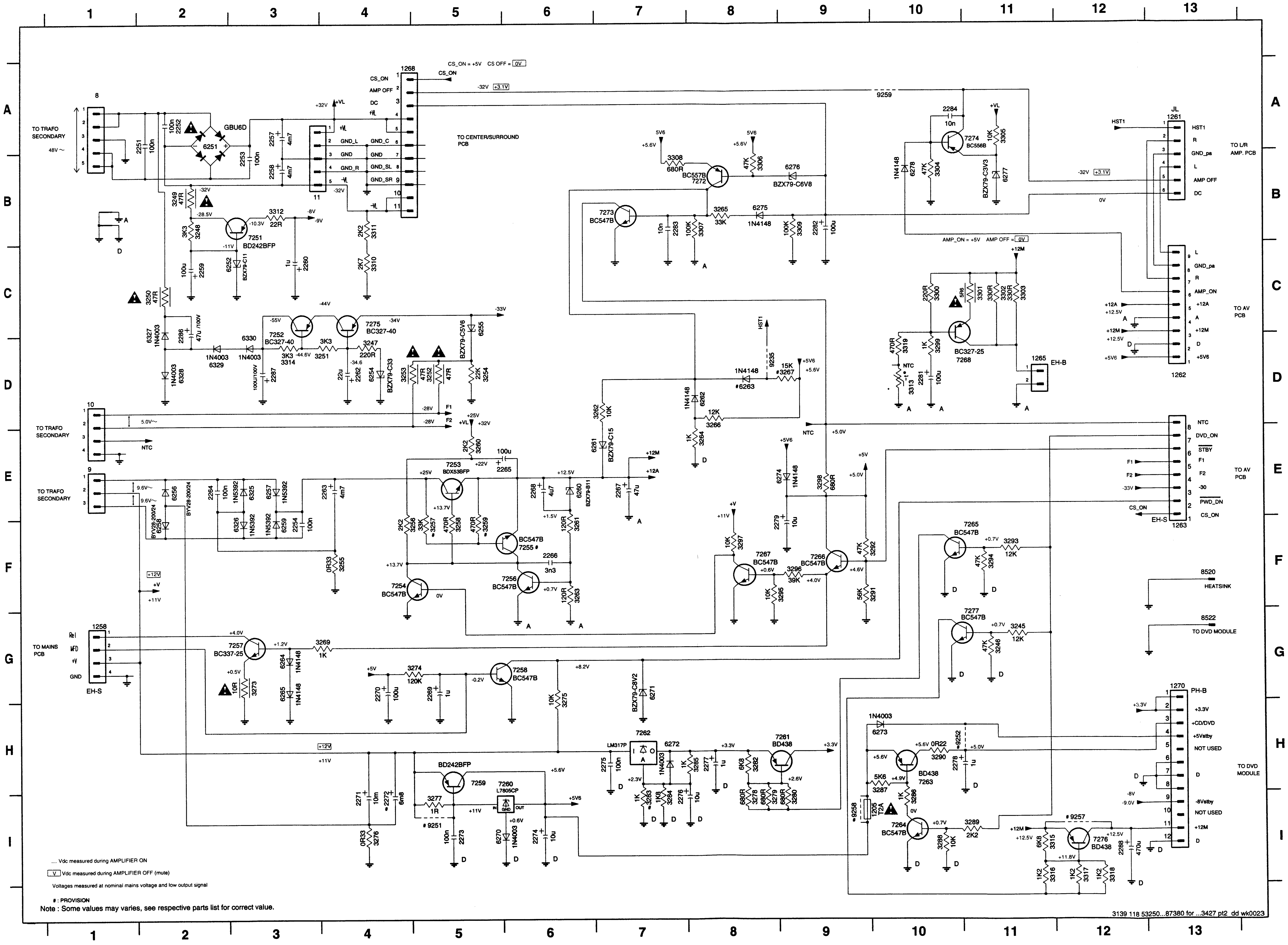
8	B3	2257	B2	2274	B3	3248	C1	3264	A1	3285	C3	3301	B1	3317	A2	6265	A5	7251	C2	7267	C5	9216	A3	9233	B3	9249	C5
9	A5	2258	C2	2275	C3	3249	C2	3265	A1	3286	C3	3302	C1	3318	A3	6270	C3	7252	A2	7268	B1	9217	A3	9234	C3	9250	C4
10	A4	2259	C2	2276	C3	3250	C2	3266	A1	3287	C4	3303	C1	3319	C1	6271	A4	7253	C4	7272	A2	9218	B2	9235	B1	9251	C4
11	B2	2260	B1	2277	C3	3251	A2	3267	A2	3288	B4	3304	A5	6251	C2	6272	C3	7254	C5	7273	A1	9219	B3	9236	C3	9252	A2
1205	B4	2262	A2	2278	A3	3252	A4	3269	A4	3289	B4	3305	A5	6252	C1	6273	A2	7255	C5	7274	A5	9220	C2	9237	C4	9253	C5
1258	A5	2263	C5	2279	B4	3253	A4	3273	A5	3290	B3	3306	A1	6254	B1	6274	B4	7256	C5	7275	A2	9222	A3	9238	C4	9254	A5
1261	A1	2264	B5	2281	C1	3254	A3	3274	A4	3291	A5	3307	A2	6255	A2	6275	A1	7257	A5	7276	A3	9223	A3	9239	C4	9255	B5
1262	A1	2265	C5	2282	A5	3255	B5	3275	A5	3292	A4	3308	A2	6256	A4	6276	B1	7258	A4	7277	A3	9224	A3	9240	B3	9256	A5
1263	A5	2266	C5	2283	A1	3256	C5	3276	B4	3293	A3	3309	A5	6257	B5	6277	A5	7259	C4	8520	B3	9225	A3	9241	A4	9257	A3
1265	B2	2267	C5	2284	A5	3257	C5	3277	C4	3294	B3	3310	B5	6258	B4	6278	A5	7260	C3	8522	B3	9226	A3	9242	A4	9258	A3
1268	B5	2268	C4	2286	B1	3258	C5	3278	C3	3295	C5	3311	B5	6259	B5	6325	B5	7261	B3	9210	A1	9227	B3	9243	A4	9259	A5
1270	A2	2269	A4	2287	A2	3259	C4	3279	C3	3296	B4	3312	C1	6260	C4	6326	B5	7262	C3	9211	B1	9228	B3	9244	A4	9260	A1
2251	C2	2270	A3	2288	A3	3260	C5	3280	C2	3297	C4	3313	C1	6261	A2	6327	B1	7263	C4	9212	C2	9229	B3	9245	A4	9261	C5
2252	C2	2271	B4	3245	A3	3261	C4	3282	C3	3298	A4	3314	A2	6262	A1	6328	B1	7264	B3	9213	B2	9230	B3	9246	B4	9262	A5
2253	C2	2272	B4	3246	A3	3262	A2	3283	C3	3299	C1	3315	A2	6263	A1	6329	B1	7265	B3	9214	A2	9231	B3	9247	B4	9263	A1
2254	B5	2273	C4	3247	A2	3263	C5	3284	C3	3300	C1	3316	A2	6264	A5	6330	B1	7266	B4	9215	A2	9232	B3	9248	B4	9265	A3



This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.

3139 113 3427 pt2 dd wk0023

SUPPLY PART - CIRCUIT DIAGRAM


1
2
3
4
5
6
7
8
9
10
11
12
13
A
B
C
D
E
F
G
H
I
TO TRAFO SECONDARY
48V ~
GBU6D
6251
2251 100n
2252 100n
2253 100n
2257 4m7
2258 4m7
1268
CS_ON
AMP OFF
DC
CS_ON = +5V CS OFF = 0V
-32V +3.1V
TO CENTER/SURROUND PCB
GND_L
GND
GND_R
GND_C
GND_SL
GND_SR
3249 47R
3248 3K3
7251 BD242BFP
3312 22R
6252 BZX79-C11
2259 100u
2260 1u
3311 2K2
3310 2K7
3250 47R
6327 1N4003
2286 47u /100V
6330 1N4003
6329 1N4003
6328 1N4003
7252 BC327-40
7275 BC327-40
3314 3K3
3251 3K3
3247 220R
2287 100U/100V
2262 22u
6254 BZX79-C33
6255 BZX79-C5V6
3253 47R
3252 47R
3254 22K
TO TRAFO SECONDARY
5.0V~
NTC
F1
F2
-28V
TO TRAFO SECONDARY
9.6V~
6256 BYV28-200/24
6258 BYV28-200/24
2264 100n
6325 1N5392
6326 1N5392
6257 1N5392
6259 1N5392
2254 100n
2263 4m7
3255 0R33
7253 BDX53BFP
3260 2K2
2265 100u
3256 2K2
3257 33K
3258 470R
3259 470R
7255 BC547B
7254 BC547B
7256 BC547B
2266 3n3
3261 120R
3263 120R
2268 4u7
6260 BZX79-B11
2267 47u
6261 BZX79-C15
3262 10K
TO MAINS PCB
1258
EH-S
7257 BC337-25
3273 10R
6264 1N4148
6265 1N4148
3269 1K
3274 120K
2270 100u
2269 1u
7258 BC547B
3275 10K
6271 BZX79-C8V2
2271 10m
2272 6m8
3276 0R33
7259 BD242BFP
3277 1R
9251
2273 100n
7260 L7805CP
6270 1N4003
2274 10u
7262 LM317P
6272
2275 100n
6273 1N4003
3283 1K
3284 1K8
2276 10u
3285 1K
2277 1u
7261 BD438
3282 6K8
3278 680R
3279 680R
3280 680R
3308 680R
7272 BC557B
3306 47K
6276 BZX79-C6V8
7273 BC547B
2283 10n
3307 100K
3265 33K
6275 1N4148
3309 100K
2282 100u
9259
2284 10n
7274 BC556B
3305 10K
6278 1N4148
3304 47K
6277 BZX79-C3V3
AMP_ON = +5V AMP OFF = 0V
3300 220R
3301 5R6
3302 330R
3303 330R
7268 BC327-25
3319 470R
3313 NTC
3299 1K
2281 100u
1265 EH-B
HST1
9235
6263 1N4148
3267 15K
6262 1N4148
3266 12K
3264 1K
6274 1N4148
3298 680R
2279 10u
3297 10K
7267 BC547B
3296 39K
7266 BC547B
3292 47K
3291 56K
3295 10K
7265 BC547B
3293 12K
3294 47K
7277 BC547B
3245 12K
3246 47K
6273 1N4003
7263 BD438
3290 0R22
9252
2278 1u
3287 5K6
3286 1K
9258
1205 T2A
7264 BC547B
3288 10K
3289 2K2
9257
7276 BD438
3315 6K8
3316 1K2
3317 1K2
3318 1K2
2288 470u
JL
1261
HST1
R
GND_pa
L
AMP OFF
DC
TO L/R AMP. PCB
1262
GND_pa
AMP_ON
+12A
+12M
+5V6
TO AV PCB
1263
EH-S
NTC
DVD_ON
STBY
PWD_DN
CS_ON
TO AV PCB
8520 HEATSINK
8522 TO DVD MODULE
1270 PH-B
+3.3V
+CD/DVD
+5Vstby
NOT USED
-8Vstby
TO DVD MODULE

.... Vdc measured during AMPLIFIER ON

V Vdc measured during AMPLIFIER OFF (mute)

Voltages measured at nominal mains voltage and low output signal

: PROVISION

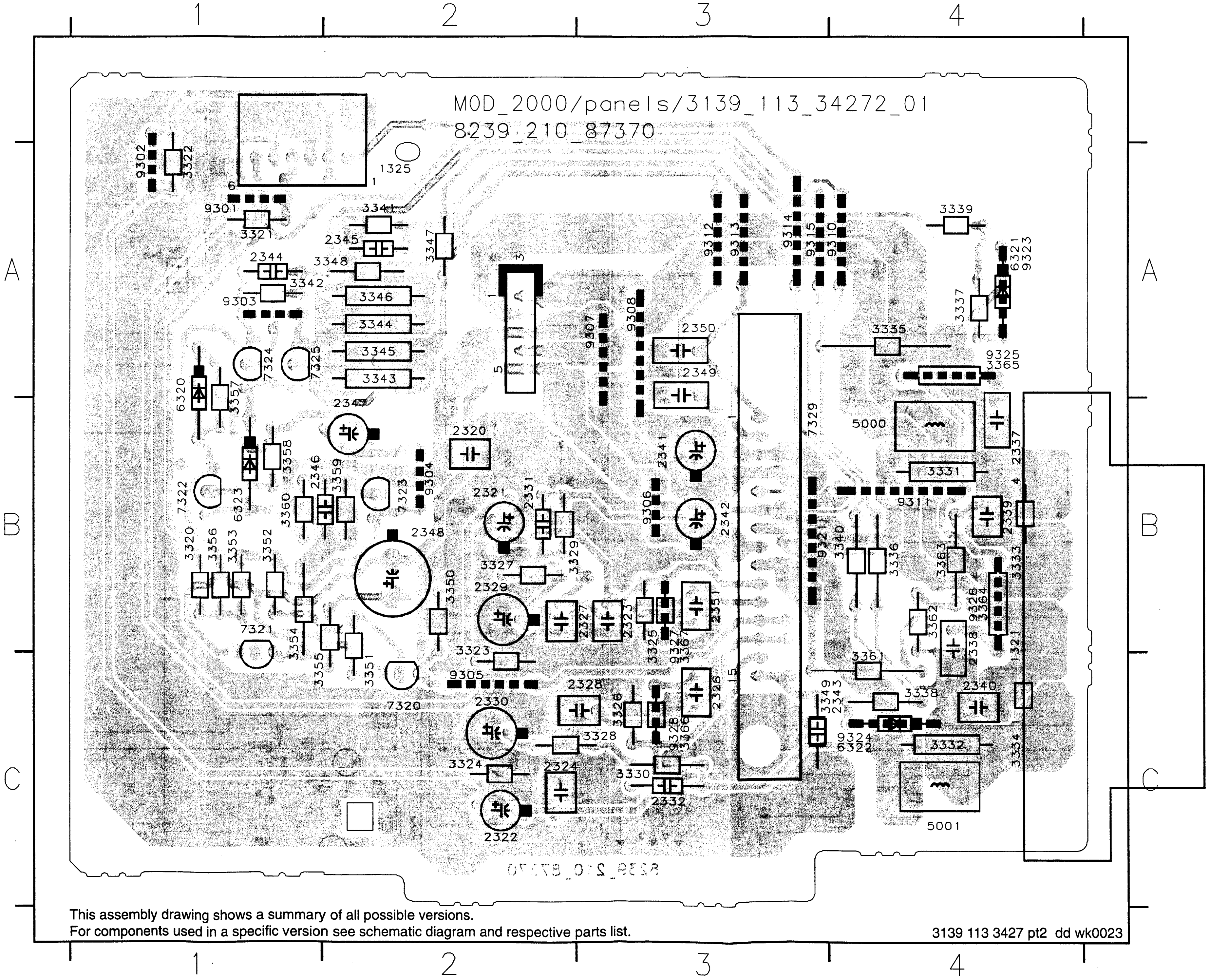
Note : Some values may varies, see respective parts list for correct value.

3139 118 53250...87380 for ...3427 pt2 dd wk0023

8	A1
9	E1
10	D1
11	B4
1205	I10
1258	G1
1261	A13
1262	D13
1263	F13
1265	D11
1268	A4
1270	G13
2251	A2
2252	A2
2253	B3
2254	F3
2257	A3
2258	B3
2259	C2
2260	C3
2262	D4
2263	E4
2264	E2
2265	E6
2266	F6
2267	E7
2268	E6
2269	G5
2270	G4
2271	I4
2272	I4
2273	I5
2274	I6
2275	H7
2276	I7
2277	H8
2278	H10
2279	F9
2281	D10
2282	B9
2283	B7
2284	A10
2286	C2
2287	D3
2288	I12
3245	G11
3246	G11
3247	D4
3248	B2
3249	B2
3250	C2
3251	D4
3252	D5
3253	D4
3254	D5
3255	F4
3256	F5
3257	F5
3258	F5
3259	F5
3260	E5
3261	F6
3262	D7
3263	F6
3264	E8
3265	B8
3266	D8
3267	D9
3269	G4
3273	G3
3274	G5
3275	G6
3276	I4
3277	I5
3278	I8
3279	I8
3280	I9
3282	H8
3283	I7
3284	I7
3285	H8
3286	I10
3287	H10
3288	I10
3289	I11
3290	H10
3291	F10
3292	F10
3293	F11
3294	F11
3295	F9
3296	F9
3297	F8
3298	E9
3299	D10
3300	C10
3301	C11
3302	C11
3303	C11
3304	B10
3305	A11
3306	B8
3307	B8
3308	B7
3309	B9
3310	C4
3311	B4
3312	B3
3313	D10
3314	D3
3315	I11
3316	I11
3317	I12
3318	I12
3319	D10
6251	A2
6252	C3
6254	D4
6255	C5
6256	E2
6257	E3
6258	F2
6259	F3
6260	E6
6261	E7
6262	D8
6263	D8
6264	G3
6265	G3
6270	I5
6271	G7
6272	H7
6273	H10
6274	E9
6275	B8
6276	B9
6277	B11
6278	B10
6325	E3
6326	F3
6327	C2
6328	D2
6329	D2
6330	D3
7251	B3
7252	C3
7253	E5
7254	F4
7255	F6
7256	F6
7257	G3
7258	G6
7259	H5
7260	H6
7261	H8
7262	H7
7263	H10
7264	I10
7265	F11
7266	F9
7267	F8
7268	D10
7272	B8
7273	B7
7274	A11
7275	C4
7276	I12
7277	G11
8520	F13
8522	G13
9235	D8
9251	I5
9252	H10
9257	I12
9258	I9
9259	A10

LEFT/RIGHT AMPLIFIER PART - COMPONENT VIEW

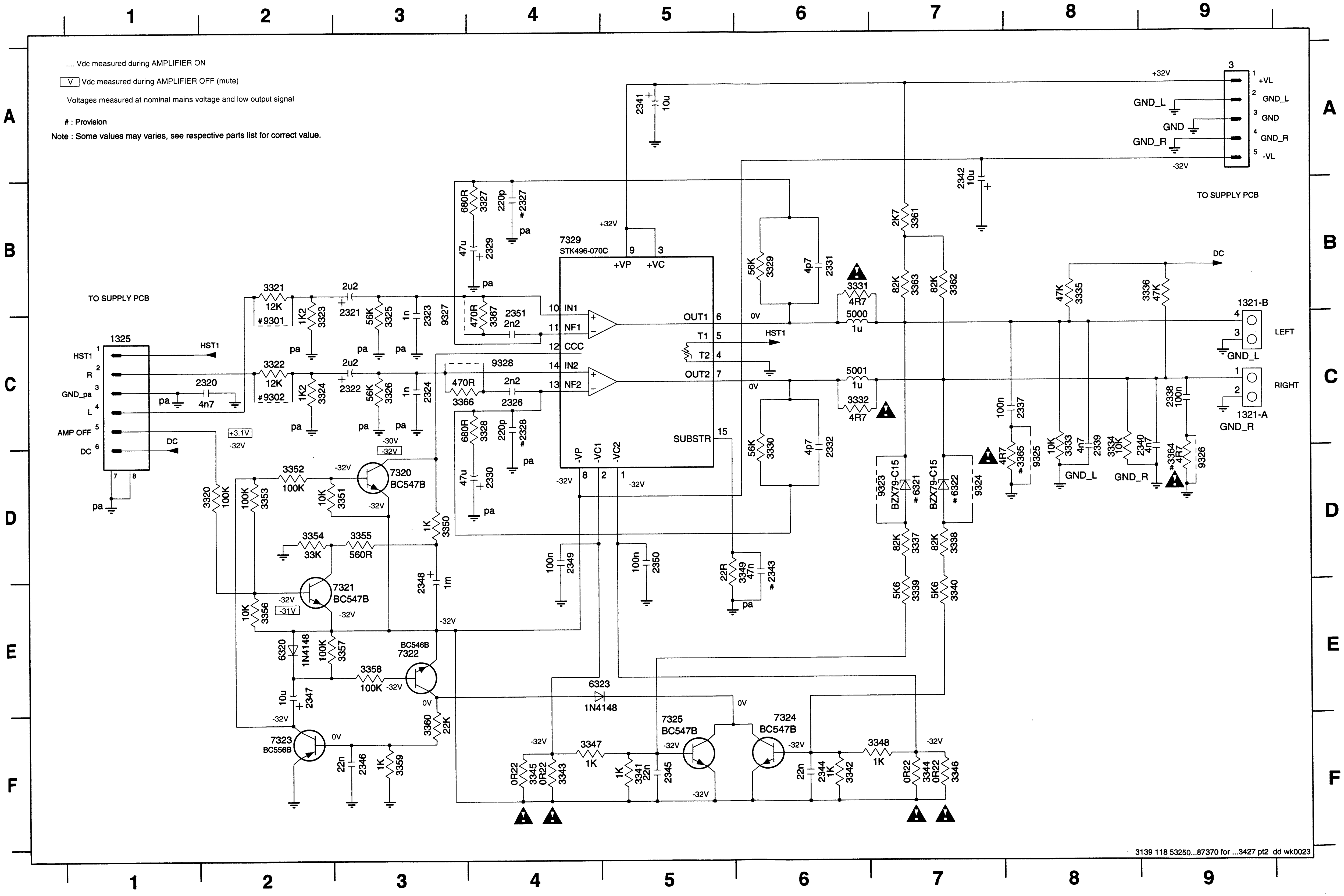
3	A2
1321	B4
1325	A2
2320	B2
2321	B2
2322	C2
2323	B3
2324	C2
2326	C3
2327	B3
2328	C3
2329	B2
2330	C2
2331	B2
2332	C3
2337	B4
2338	B4
2339	B4
2340	C4
2341	B3
2342	B3
2343	C4
2344	A1
2345	A2
2346	B1
2347	B2
2348	B2
2349	A3
2350	A3
2351	B3
3320	B1
3321	A1
3322	A1
3323	B2
3324	C2
3325	B3
3326	C3
3327	B2
3328	C3
3329	B2
3330	C3
3331	B4
3332	C4
3333	B4
3334	C4
3335	A4
3336	B4
3337	A4
3338	C4
3339	A4
3340	B4
3341	A2
3342	A1
3343	A2
3344	A2
3345	A2
3346	A2
3347	A2
3348	A2
3349	C3
3350	B2
3351	C2
3352	B1
3353	B1
3354	B1
3355	C1
3356	B1
3357	B1
3358	B1
3359	B2
3360	B1
3361	C4
3362	B4
3363	B4
3364	B4
3365	A4
3366	C3
3367	B3
5000	B4
5001	C4
6320	A1
6321	A4
6322	C4
6323	B1
7320	C2
7321	B1
7322	B1
7323	B2
7324	A1
7325	A1
7329	B3
9301	A1
9302	A1
9303	A1
9304	B2
9305	C2
9306	B3
9307	A3
9308	A3
9310	A4
9311	B4
9312	A3
9313	A3
9314	A3
9315	A3
9321	B3
9323	A4
9324	C4
9325	A4
9326	B4
9327	B3
9328	C3


1
2
3
4
A
B
C
MOD_2000/panels/3139_113_34272_01
8239_210_87370
1325
9302
3322
9301
3321
3341
2345
3347
3348
2344
3342
9303
3346
3344
3345
3343
7324
7325
6320
3357
2347
2320
7322
6323
3358
2346
3359
3360
7323
9304
2321
2331
3329
2348
3320
3356
3353
3352
3327
3350
2329
7321
3354
3355
3351
3323
9305
7320
2330
3328
3324
2324
2322
2328
3326
9328
3366
3330
2332
2327
2323
3325
9327
3367
2351
2326
9307
9308
2350
2349
2341
9306
2342
9312
9313
9314
9315
9310
7329
9321
3340
3336
3339
6321
9323
3337
3335
9325
3365
5000
2337
3331
9311
2339
3363
3333
3362
9326
3364
2338
3361
3338
2340
3349
2343
9324
6322
3332
3334
5001
1321

This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram and respective parts list.

3139 113 3427 pt2 dd wk0023

LEFT/RIGHT AMPLIFIER PART - CIRCUIT DIAGRAM



.... Vdc measured during AMPLIFIER ON

V Vdc measured during AMPLIFIER OFF (mute)

Voltages measured at nominal mains voltage and low output signal

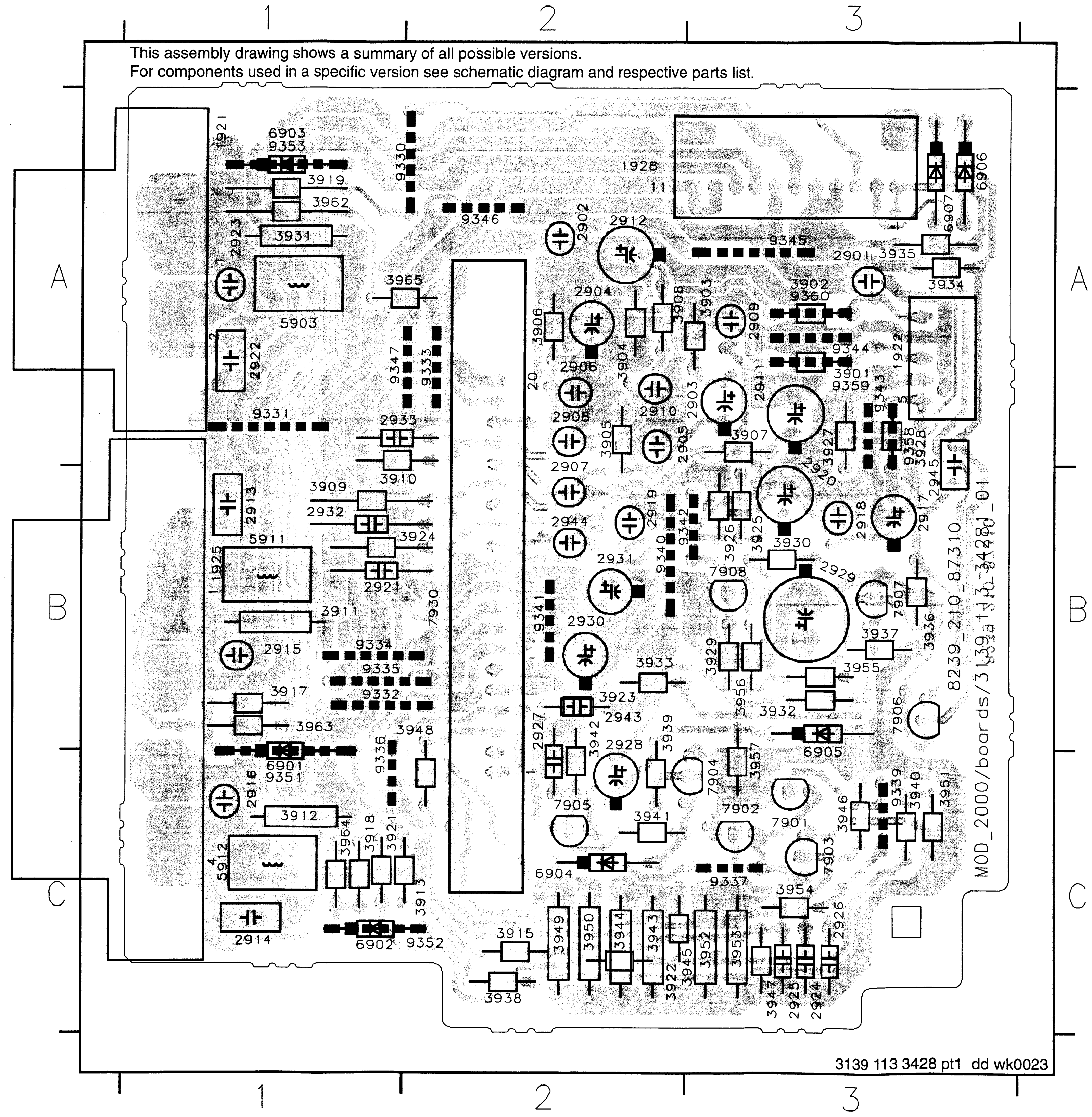
: Provision

Note : Some values may varies, see respective parts list for correct value.

1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
TO SUPPLY PCB
1325
HST1
R
GND_pa
L
AMP OFF
DC
pa
2320
4n7
+3.1V
-32V
3320
100K
3321
12K
#9301
3322
12K
#9302
3323
1K2
3324
1K2
2u2
2321
2322
3325
56K
3326
56K
2323
1n
2324
1n
9327
9328
680R
3327
220p
#2327
47u
2329
3367
470R
2351
2n2
3366
470R
2326
2n2
3328
680R
#2328
2330
47u
-30V
-32V
7329
STK496-070C
+32V
+VP
+VC
IN1
NF1
CCC
IN2
NF2
OUT1
T1
T2
OUT2
SUBSTR
-VP
-VC1
-VC2
HST1
0V
3329
56K
2331
4p7
3331
4R7
5000
1u
5001
1u
3332
4R7
3330
56K
2332
4p7
2341
10u
2342
10u
+VL
GND_L
GND
GND_R
-VL
TO SUPPLY PCB
3361
2K7
3363
82K
3362
82K
3335
47K
3336
47K
DC
1321-B
LEFT
1321-A
RIGHT
2337
100n
2338
100n
#3365
4R7
9325
3333
10K
2339
4n7
3334
10K
2340
4n7
#3364
4R7
9326
9323
BZX79-C15
#6321
#6322
9324
3337
82K
3338
82K
3339
5K6
3340
5K6
3352
100K
3351
10K
7320
BC547B
3353
100K
3350
1K
3354
33K
3355
560R
2348
1m
7321
BC547B
-31V
3356
10K
6320
1N4148
3357
100K
3358
100K
7322
BC546B
2347
10u
7323
BC556B
2346
22n
3359
1K
3360
22K
2349
100n
2350
100n
3349
22R
2343
47n
6323
1N4148
7325
BC547B
7324
BC547B
3345
0R22
3343
0R22
3347
1K
3341
1K
2345
22n
2344
22n
3342
1K
3348
1K
3344
0R22
3346
0R22
3139 118 53250...87370 for ...3427 pt2 dd wk0023

3	A9
1321-A	C9
1321-B	B9
1325	C1
2320	C2
2321	B3
2322	C3
2323	C3
2324	C3
2326	C4
2327	B4
2328	C4
2329	B4
2330	D4
2331	B6
2332	D6
2337	C8
2338	C9
2339	D8
2340	D8
2341	A5
2342	B7
2343	D6
2344	F6
2345	F5
2346	F3
2347	E2
2348	E3
2349	D4
2350	D5
2351	B4
3320	D2
3321	B2
3322	C2
3323	C2
3324	C2
3325	C3
3326	C3
3327	B4
3328	C4
3329	B6
3330	D6
3331	B6
3332	C6
3333	D8
3334	D8
3335	B8
3336	B9
3337	D7
3338	D7
3339	E7
3340	E7
3341	F5
3342	F6
3343	F4
3344	F7
3345	F4
3346	F7
3347	F4
3348	F7
3349	D6
3350	D3
3351	D3
3352	D2
3353	D2
3354	D2
3355	D3
3356	E2
3357	E3
3358	E3
3359	F3
3360	F3
3361	B7
3362	B7
3363	B7
3364	D9
3365	D8
3366	C3
3367	C4
5000	C6
5001	C6
6320	E2
6321	D7
6322	D7
6323	E4
7320	D3
7321	E2
7322	E3
7323	F2
7324	F6
7325	F5
7329	B4
9301	C2
9302	C2
9323	D7
9324	D7
9325	D8
9326	C9
9327	B3
9328	C4

CENTER/SURROUND AMPLIFIER PART - COMPONENT VIEW



This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram and respective parts list.

3139 113 3428 pt1 dd wk0023

1
2
3
A
B
C
8239_210_87310
MOD_2000/boards/3139_113_3428_01
1921
6903
9353
3919
3962
3931
2923
5903
2922
3965
9330
9346
1928
2902
2912
9345
2901
3935
3934
6906
6907
1922
2904
3906
3908
3903
2909
3902
9360
9344
3901
9359
9343
2906
3904
2905
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2903
2911
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3927
9358
3928
2945
9347
9333
9331
2933
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5911
1925
2921
3911
7930
2907
2944
2919
9342
9340
3926
3925
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2918
2917
2931
3930
2929
7908
7907
3936
9341
2930
3937
2915
9334
9335
9332
3917
3963
3933
3923
2943
3929
3956
3955
3932
7906
3948
9336
6901
9351
2927
3942
2928
3939
7904
3957
6905
2916
3912
3964
3918
3921
7905
3941
7902
7901
3946
9339
3940
3951
7903
5912
3913
6904
9337
3954
2914
6902
9352
3915
3938
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3922
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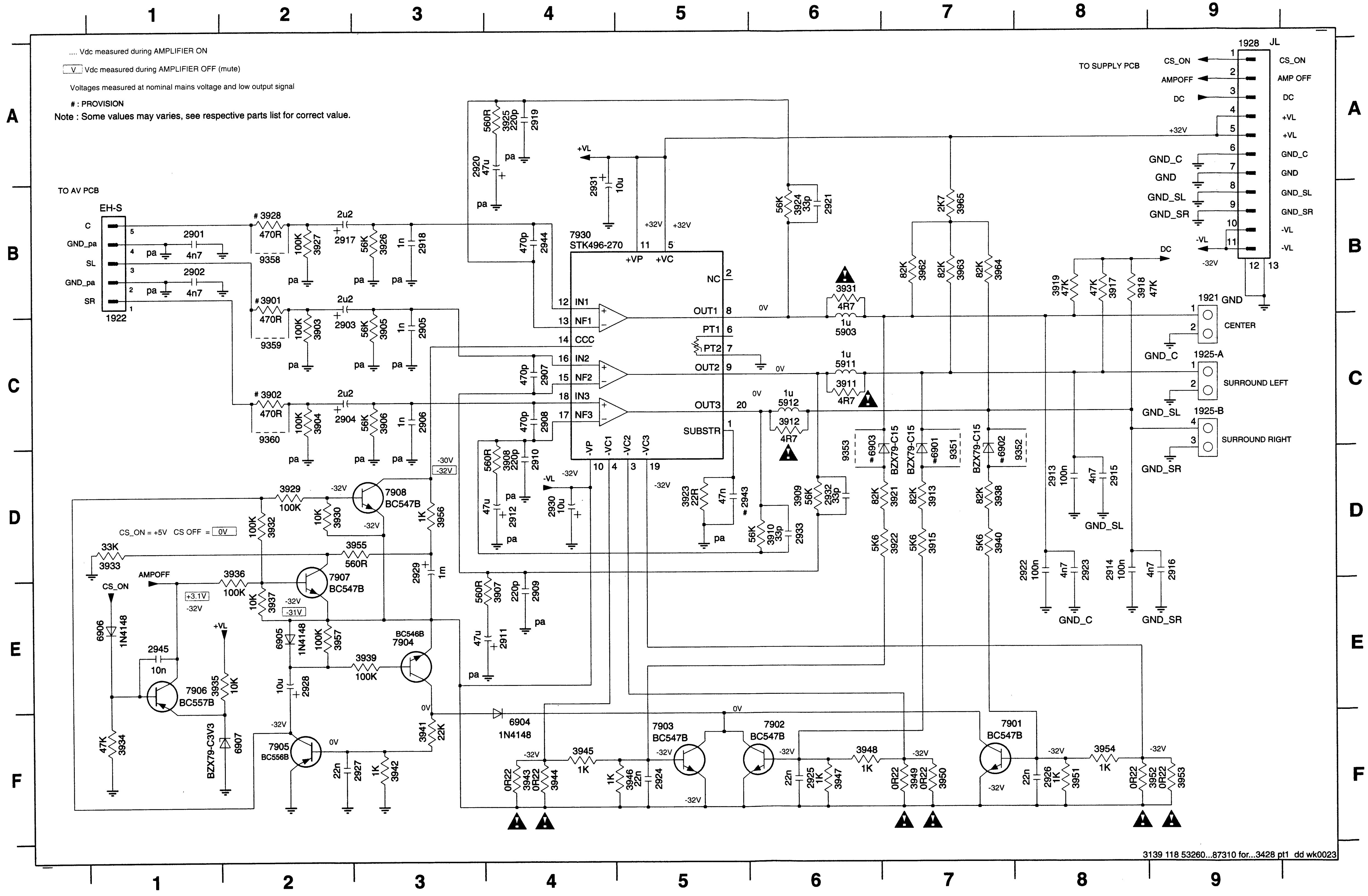
3947
2925
2924
2926

1921	A1
1922	A3
1925	B1
1928	A2
2901	A3
2902	A2
2903	A3
2904	A2
2905	A2
2906	A2
2907	B2
2908	A2
2909	A3
2910	A2
2911	A3
2912	A2
2913	B1
2914	C1
2915	B1
2916	C1
2917	B3
2918	B3
2919	B2
2920	B3
2921	B1
2922	A1
2923	A1
2924	C3
2925	C3
2926	C3
2927	B2
2928	B2
2929	B3
2930	B2
2931	B2
2932	B1
2933	A1
2943	B2
2944	B2
2945	B3
3901	A3
3902	A3
3903	A3
3904	A2
3905	A2
3906	A2
3907	A3
3908	A2
3909	B1
3910	B1
3911	B1
3912	C1
3913	C2
3915	C2
3917	B1
3918	C1
3919	A1
3921	C1
3922	C2
3923	B2
3924	B2
3925	B3
3926	B3
3927	A3
3928	A3
3929	B3
3930	B3
3931	A1
3932	B3
3933	B2
3934	A3
3935	A3
3936	B3
3937	B3
3938	C2
3939	B2
3940	C3
3941	C2
3942	B2
3943	C2
3944	C2
3945	C3
3946	C3
3947	C3
3948	B2
3949	C2
3950	C2
3951	C3
3952	C3
3953	C3
3954	C3
3955	B3
3956	B3
3957	C3
3962	A1
3963	B1
3964	C1
3965	A1
5903	A1
5911	B1
5912	C1
6901	C1
6902	C1
6903	A1
6904	C2
6905	C3
6906	A3
6907	A3
7901	C3
7902	C3
7903	C3
7904	C3
7905	C2
7906	B3
7907	B3
7908	B3
7930	B2
9330	A1
9331	A1
9332	B1
9333	A2
9334	B1
9335	B1
9336	C1
9337	C3
9339	C3
9340	B2
9341	B2
9342	B2
9343	A3
9344	A3
9345	A3
9346	A2
9347	A1
9351	C1
9352	C2
9353	A1
9358	A3
9359	A3
9360	A3

CENTER/SURROUND AMPLIFIER PART - CIRCUIT DIAGRAM



.... Vdc measured during AMPLIFIER ON

V Vdc measured during AMPLIFIER OFF (mute)

Voltages measured at nominal mains voltage and low output signal

: PROVISION

Note : Some values may varies, see respective parts list for correct value.

1 2 3 4 5 6 7 8 9
A B C D E F
TO AV PCB
EH-S
C
GND_pa
SL
GND_pa
SR
1922
2901 4n7
2902 4n7
pa
# 3928 470R
# 3901 470R
# 3902 470R
9358
9359
9360
2u2 2917
2u2 2903
2u2 2904
100K 3927
100K 3903
100K 3904
56K 3926
56K 3905
56K 3906
1n 2918
1n 2905
1n 2906
560R 3925 220p 2919
2920 47u
470p 2944
470p 2907
470p 2908
560R 3908 220p 2910
47u 2912
-VL
2930 10u
+VL
2931 10u
+32V
7930
STK496-270
+VP +VC
IN1 NF1 CCC IN2 NF2 IN3 NF3
NC OUT1 PT1 PT2 OUT2 OUT3 SUBSTR
-VP -VC1 -VC2 -VC3
0V
56K 3924 33p 2921
3931 4R7
1u 5903
1u 5911
3911 4R7
1u 5912
3912 4R7
3923 22R
47n # 2943
56K 3910 33p 2933
3909 56K 2932 33p
2K7 3965
82K 3962
82K 3963
82K 3964
9353 # 6903 BZX79-C15
BZX79-C15 # 6901 9351
BZX79-C15 # 6902 9352
82K 3921
82K 3913
82K 3938
5K6 3922
5K6 3915
5K6 3940
3919 47K
47K 3917
3918 47K
2913 100n
4n7 2915
2922 100n 4n7 2923
2914 100n 4n7 2916
TO SUPPLY PCB
1928 JL
CS_ON
AMPOFF
AMP OFF
DC
+VL
GND_C
GND
GND_SL
GND_SR
-VL
-32V
1921 GND
CENTER
1925-A
SURROUND LEFT
1925-B
SURROUND RIGHT
-30V
-32V
3929 100K
7908 BC547B
10K 3930
1K 3956
CS_ON = +5V CS OFF = 0V
33K 3933
100K 3932
3955 560R
AMPOFF
3936 100K
7907 BC547B
10K 3937
-31V
+3.1V
2929 1m
560R 3907 220p 2909
47u 2911
6906 1N4148
2945 10n
7906 BC557B
3935 10K
6905 1N4148
100K 3957
3939 100K
BC546B 7904
10u 2928
47K 3934
BZX79-C3V3 6907
7905 BC556B
22n 2927
1K 3942
3941 22K
6904 1N4148
7903 BC547B
7902 BC547B
7901 BC547B
3945 1K
3948 1K
3954 1K
0R22 3943
0R22 3944
1K 3946
22n 2924
22n 2925
1K 3947
0R22 3949
0R22 3950
22n 2926
1K 3951
0R22 3952
0R22 3953
3139 118 53260...87310 for...3428 pt1 dd wk0023

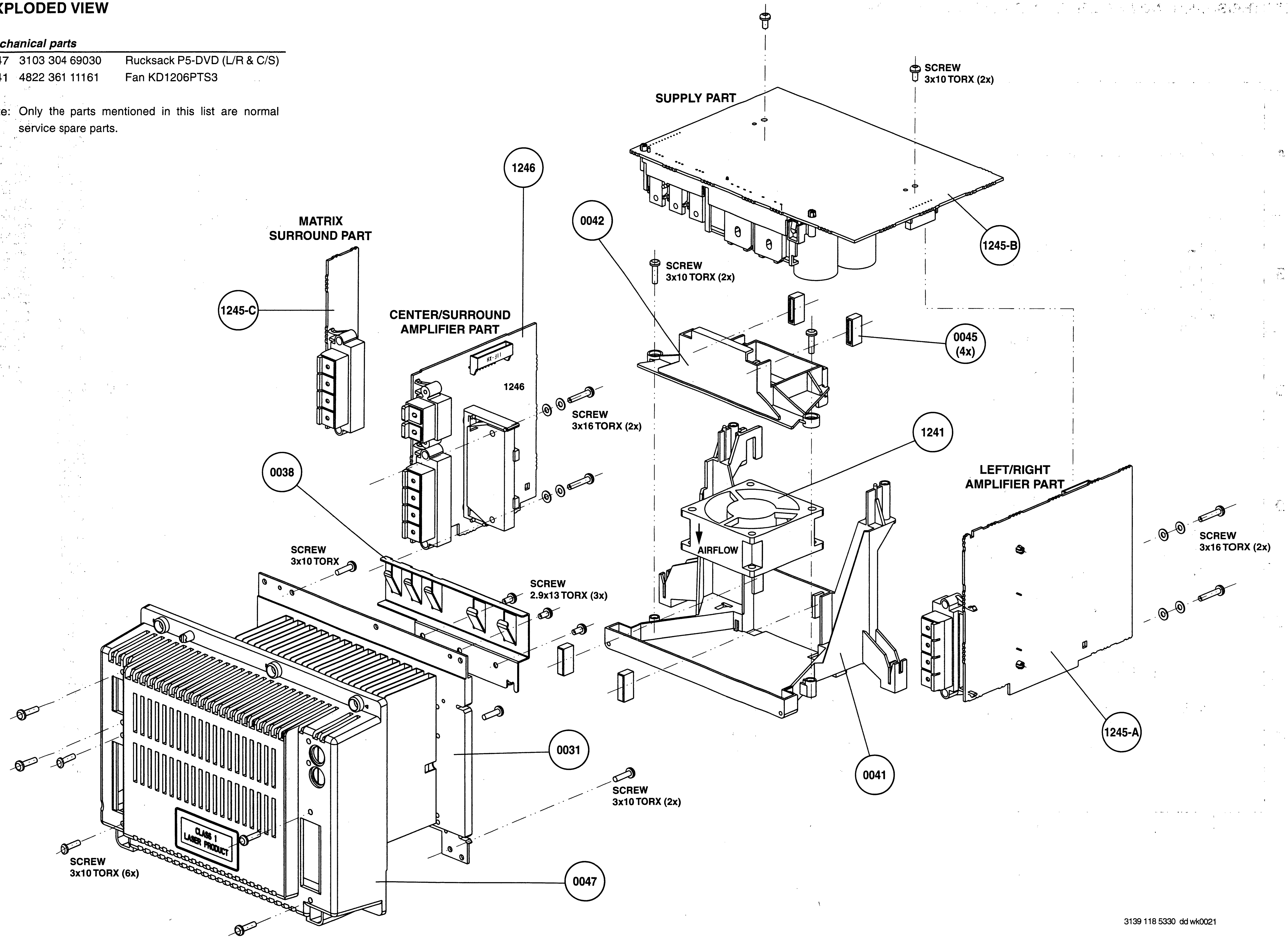
1921	B9
1922	B1
1925-A	C9
1925-B	C9
1928	A9
2901	B1
2902	B1
2903	C2
2904	C2
2905	C3
2906	C3
2907	C4
2908	C4
2909	E4
2910	D4
2911	E4
2912	D4
2913	D8
2914	D8
2915	D8
2916	D9
2917	B2
2918	B3
2919	A4
2920	A3
2921	B6
2922	D8
2923	D8
2924	F5
2925	F6
2926	F8
2927	F3
2928	E2
2929	D3
2930	D4
2931	B4
2932	D6
2933	D6
2943	D5
2944	B4
2945	E1
3901	B2
3902	C2
3903	C2
3904	C2
3905	C3
3906	C3
3907	E4
3908	D4
3909	D6
3910	D6
3911	C6
3912	C6
3913	D7
3915	D7
3917	B8
3918	B8
3919	B8
3921	D7
3922	D7
3923	D5
3924	B6
3925	A4
3926	B3
3927	B2
3928	B2
3929	D2
3930	D2
3931	B6
3932	D2
3933	D1
3934	F1
3935	E1
3936	D2
3937	E2
3938	D7
3939	E3
3940	D7
3941	F3
3942	F3
3943	F4
3944	F4
3945	F4
3946	F5
3947	F6
3948	F6
3949	F7
3950	F7
3951	F8
3952	F9
3953	F9
3954	F8
3955	D3
3956	D3
3957	E2
3962	B7
3963	B7
3964	B7
3965	B7
5903	C6
5911	C6
5912	C6
6901	D7
6902	D7
6903	C6
6904	F4
6905	E2
6906	E1
6907	F2
7901	F8
7902	F6
7903	F5
7904	E3
7905	F2
7906	E1
7907	D2
7908	D3
7930	B4
9351	D7
9352	D8
9353	D6
9358	B2
9359	C2
9360	C2

EXPLODED VIEW

Mechanical parts

0047	3103 304 69030	Rucksack P5-DVD (L/R & C/S)
1241	4822 361 11161	Fan KD1206PTS3

Note: Only the parts mentioned in this list are normal service spare parts.


SUPPLY PART
SCREW
3x10 TORX (2x)
1245-B
0042
SCREW
3x10 TORX (2x)
0045
(4x)
1246
MATRIX
SURROUND PART
1245-C
CENTER/SURROUND
AMPLIFIER PART
1246
SCREW
3x16 TORX (2x)
1241
LEFT/RIGHT
AMPLIFIER PART
0038
AIRFLOW
SCREW
3x16 TORX (2x)
SCREW
3x10 TORX
SCREW
2.9x13 TORX (3x)
1245-A
0031
0041
SCREW
3x10 TORX (2x)
CLASS 1
LASER PRODUCT
SCREW
3x10 TORX (6x)
0047
3139 118 5330 dd wk0021

ELECTRICAL PARTS LIST - MAINS BOARD

MISCELLANEOUS

1901	4822 265 31015	⚠	Mains Socket
1901#	2422 030 00328	⚠	Mains Socket
1902*	4822 272 10269	⚠	Voltage Selector
1903*	4822 071 52001	⚠	Fuse T200mA 250V IEC
1905^	4822 071 55002	⚠	Fuse T5A 250V IEC
1905#	4822 252 51123	⚠	Fuse T6,3A 250V UL
1906*	4822 071 55002	⚠	Fuse T5A 250V IEC
1907*	4822 071 55002	⚠	Fuse T5A 250V IEC
1909*	4822 267 10728	⚠	Primary Connector 4P
1910	4822 265 20723	⚠	Primary Connector 2P
1920	4822 071 55002	⚠	Fuse T5A 250V IEC
1923	4822 071 55002	⚠	Fuse T5A 250V IEC
1924	4822 071 52502	⚠	Fuse T2,5A 250V IEC
1925	4822 071 52502	⚠	Fuse T2,5A 250V IEC

CAPACITORS

2902	4822 121 43526		47nF 5% 250V
2903	4822 121 43526		47nF 5% 250V
2904*	4822 124 40255		100µF 20% 63V
2905*	4822 124 40207		100µF 20% 25V

RESISTORS

3901#	4822 053 21106	⚠	10M 5% 0,5W
3902	4822 050 11002		1k 1% 0,4W
3903	4822 050 11002		1k 1% 0,4W
3904*	4822 116 52283		4k7 5% 0,5W
3904**	4822 116 52244		15k 5% 0,5W
3905*	4822 116 52256		2k2 5% 0,5W
3906*	4822 050 21003		10k 1% 0,6W
3908^	4822 053 10471		470R 5% 1W
3908#	4822 053 10121		120R 5% 1W
3920*	4822 052 10108	⚠	1R 5% 0,33W

COILS & FILTERS

5901^	4822 157 11832	⚠	400µH 3A
5902*	4822 157 11628	⚠	Mains Choke
5903*	4822 146 11144	⚠	Standby Transformer
5903^	4822 146 11143	⚠	Standby Transformer
5903#	4822 146 11142	⚠	Standby Transformer
5905	4822 280 10382	⚠	Relay 1P

DIODES

6900**	4822 130 31878	1N4003G
6901	4822 130 31878	1N4003G
6902	4822 130 31878	1N4003G
6903	4822 130 31878	1N4003G
6904	4822 130 31878	1N4003G
6905	4822 130 30621	1N4148
6906	4822 130 30621	1N4148
6908*	4822 130 34382	BZX79-C8V2
6909*	4822 130 32245	BYV10-40
6910*	4822 130 31878	1N4003G
6911	4822 130 30621	1N4148
6912	4822 130 30621	1N4148

TRANSISTORS & INTEGRSTED CIRCUITS

7901*	4822 130 41246	BC327-25
7902*	4822 130 40959	BC547B

* For /21/21M only
** Not for /21/21M
^ For /22/30 only
# For /37 only

Note : Only the parts mentioned in this list are normal service spare parts.

ELECTRICAL PARTS LIST - SUPPLY & LEFT/RIGHT AMPLIFIER BOARD

MISCELLANEOUS

1205	4822 071 52002	⚠	Fuse T2A 250V IEC
1321	4822 267 31176		L/R Loudspeaker Terminal

CAPACITORS

2251	5322 121 42578	100nF 5% 250V
2252	5322 121 42578	100nF 5% 250V
2253	5322 121 42578	100nF 5% 250V
2254	5322 121 42578	100nF 5% 250V
2257	4822 124 80415	4700µF 20% 50V
2258	4822 124 80415	4700µF 20% 50V
2259	4822 124 40255	100µF 20% 63V
2260	4822 124 21913	1µF 20% 63V
2262	4822 124 81151	22µF 50V
2263	4822 124 80563	4700µF 20% 35V
2264	5322 121 42578	100nF 5% 250V
2265	4822 124 40255	100µF 20% 63V
2266	4822 122 10577	3,3nF 10% 16V
2267	4822 124 40433	47µF 20% 25V
2268	4822 124 40769	4,7µF 20% 100V
2269	4822 124 21913	1µF 20% 63V
2270	4822 124 41584	100µF 20% 10V
2271	2020 012 93745	10000µF 20% 16V
2273	4822 126 12882	100nF +80/-20% 50V
2274	4822 124 40248	10µF 20% 63V
2275	4822 126 12882	100nF +80/-20% 50V
2276	4822 124 11947	10µF 20% 16V
2277	4822 124 21913	1µF 20% 63V
2278	4822 124 21913	1µF 20% 63V
2279	4822 124 40248	10µF 20% 63V
2281	4822 124 40207	100µF 20% 25V
2282	4822 124 41584	100µF 20% 10V
2283	4822 121 51387	10nF 20% 16V
2284	4822 122 30043	10nF 80% 63V
2286	2020 012 93594	47µF 20% 100V
2287	2020 012 93741	100µF 20% 100V
2288	4822 124 11767	470µF 20% 25V
2320	5322 122 32261	4,7nF 10% 100V
2321	4822 124 22652	2,2µF 20% 50V
2322	4822 124 22652	2,2µF 20% 50V
2323	5322 122 32331	1nF 10% 100V
2324	5322 122 32331	1nF 10% 100V
2326	5322 122 32818	2,2nF 10% 100V
2329	4822 124 41751	47µF 20% 50V
2330	4822 124 41751	47µF 20% 50V
2331	4822 122 10465	4,7pF 10% 50V
2332	4822 122 10465	4,7pF 10% 50V
2337	5322 121 42386	100nF 5% 63V
2338	5322 121 42386	100nF 5% 63V
2339	5322 122 32261	4,7nF 10% 100V
2340	5322 122 32261	4,7nF 10% 100V
2341	4822 124 40248	10µF 20% 63V
2342	4822 124 40248	10µF 20% 63V
2344	4822 126 11585	22nF +80/-20% 25V
2345	4822 126 11585	22nF +80/-20% 25V
2346	4822 126 11585	22nF +80/-20% 25V
2347	4822 124 40248	10µF 20% 63V
2348	4822 124 81144	1000µF 16V
2349	5322 121 42386	100nF 5% 63V
2350	5322 121 42386	100nF 5% 63V
2351	5322 122 32818	2,2nF 10% 100V

RESISTORS

3245	4822 116 52238		12k 5% 0,5W
3246	4822 116 83884		47k 5% 0,5W
3247	4822 116 83872		220R 5% 0,5W
3248	4822 116 52269		3k3 5% 0,5W
3249	4822 052 10479	⚠	47R 5% 0,33W
3250	4822 052 10479	⚠	47R 5% 0,33W
3251	4822 116 52269		3k3 5% 0,5W
3252	4822 052 10479	⚠	47R 5% 0,33W
3253	4822 052 10479	⚠	47R 5% 0,33W
3254	4822 116 52257		22k 5% 0,5W
3255	4822 117 11342		0R33 5% 2W
3256	4822 116 52256		2k2 5% 0,5W
3258	4822 116 83883		470R 5% 0,5W
3260	4822 116 52256		2k2 5% 0,5W
3261	4822 116 52206		120R 5% 0,5W
3262	4822 050 21003		10k 1% 0,6W
3263	4822 116 52206		120R 5% 0,5W
3264	4822 050 11002		1k 1% 0,4W
3265	4822 050 23303		33k 1% 0,6W
3266	4822 116 52238		12k 5% 0,5W
3269	4822 050 11002		1k 1% 0,4W
3273	4822 052 10109	⚠	10R 5% 0,33W
3274	4822 116 52239		120k 5% 0,5W
3275	4822 050 21003		10k 1% 0,6W
3276	4822 117 11342		0R33 5% 2W
3277	4822 116 80176		1R 5% 0,5W
3278	4822 116 52228		680R 5% 0,5W
3279	4822 116 52228		680R 5% 0,5W
3280	4822 116 52228		680R 5% 0,5W
3282	4822 116 83961		6k8 5%
3284	4822 116 52249		1k8 5% 0,5W
3285	4822 050 11002		1k 1% 0,4W
3286	4822 050 11002		1k 1% 0,4W
3287	4822 116 52289		5k6 5% 0,5W
3288	4822 050 21003		10k 1% 0,6W
3289	4822 116 52256		2k2 5% 0,5W
3290	4822 117 11744		0R22 5% 1W
3291	4822 116 52291		56k 5% 0,5W
3292	4822 116 83884		47k 5% 0,5W
3293	4822 116 52238		12k 5% 0,5W
3294	4822 116 83884		47k 5% 0,5W
3295	4822 050 21003		10k 1% 0,6W

RESISTORS

3296	4822 116 83882	39k 5% 0,5W
3297	4822 050 21003	10k 1% 0,6W
3298	4822 116 52228	680R 5% 0,5W
3299	4822 050 11002	1k 1% 0,4W
3300	4822 116 83872	220R 5% 0,5W
3301	4822 052 10568	⚠ 5R60 5% 0,33W
3302	4822 116 52219	330R 5% 0,5W
3303	4822 116 52219	330R 5% 0,5W
3304	4822 116 83884	47k 5% 0,5W
3305	4822 050 21003	10k 1% 0,6W
3306	4822 116 83884	47k 5% 0,5W
3307	4822 116 52234	100k 5% 0,5W
3308	4822 116 52228	680R 5% 0,5W
3309	4822 116 52234	100k 5% 0,5W
3310	4822 116 52263	2k7 5% 0,5W
3311	4822 116 52256	2k2 5% 0,5W
3312	4822 116 52186	22R 5% 0,5W
3313	4822 117 12063	NTC DC 5W 10k 5%
3314	4822 116 52269	3k3 5% 0,5W
3315	4822 116 83961	6k8 5%
3316	4822 116 52207	1k2 5% 0,5W
3317	4822 116 52207	1k2 5% 0,5W
3318	4822 116 52207	1k2 5% 0,5W
3319	4822 116 83883	470R 5% 0,5W
3320	4822 116 52234	100k 5% 0,5W
3321	4822 116 52238	12k 5% 0,5W
3322	4822 116 52238	12k 5% 0,5W
3323	4822 116 52207	1k2 5% 0,5W
3324	4822 116 52207	1k2 5% 0,5W
3325	4822 116 52291	56k 5% 0,5W
3326	4822 116 52291	56k 5% 0,5W
3327	4822 116 52228	680R 5% 0,5W
3328	4822 116 52228	680R 5% 0,5W
3329	4822 116 52291	56k 5% 0,5W
3330	4822 116 52291	56k 5% 0,5W
3331	4822 053 10478	⚠ 4R7 5% 1W
3332	4822 053 10478	⚠ 4R7 5% 1W
3333	4822 050 21003	10k 1% 0,6W
3334	4822 050 21003	10k 1% 0,6W
3335	4822 116 83884	47k 5% 0,5W
3336	4822 116 83884	47k 5% 0,5W
3337	4822 116 52304	82k 5% 0,5W
3338	4822 116 52304	82k 5% 0,5W
3339	4822 116 52289	5k6 5% 0,5W
3340	4822 116 52289	5k6 5% 0,5W
3341	4822 050 11002	1k 1% 0,4W
3342	4822 050 11002	1k 1% 0,4W
3343	4822 117 11744	⚠ 0R22 5% 1W
3344	4822 117 11744	⚠ 0R22 5% 1W
3345	4822 117 11744	⚠ 0R22 5% 1W
3346	4822 117 11744	⚠ 0R22 5% 1W
3347	4822 050 11002	1k 1% 0,4W
3348	4822 050 11002	1k 1% 0,4W
3349	4822 116 52186	22R 5% 0,5W
3350	4822 050 11002	1k 1% 0,4W
3351	4822 050 21003	10k 1% 0,6W
3352	4822 116 52234	100k 5% 0,5W
3353	4822 116 52234	100k 5% 0,5W
3354	4822 050 23303	33k 1% 0,6W
3355	4822 116 52226	560R 5% 0,5W
3356	4822 050 21003	10k 1% 0,6W
3357	4822 116 52234	100k 5% 0,5W
3358	4822 116 52234	100k 5% 0,5W
3359	4822 050 11002	1k 1% 0,4W
3360	4822 116 52257	22k 5% 0,5W
3361	4822 116 52263	2k7 5% 0,5W
3362	4822 116 52304	82k 5% 0,5W
3363	4822 116 52304	82k 5% 0,5W
3366	4822 116 83883	470R 5% 0,5W
3367	4822 116 83883	470R 5% 0,5W

COILS & FILTERS

5000	4822 157 62255	Coil 18,5 Turns
5001	4822 157 62255	Coil 18,5 Turns

DIODES

6251	4822 130 10944	⚠ GBU6D
6252	9337 129 20673	BZX79-C11
6254	3198 010 53390	BZX79-B33
6255	4822 130 34173	BZX79-C5V6
6256	9340 550 66112	BYV28-200/24
6257	5322 130 80686	1N5392
6258	9340 550 66112	BYV28-200/24
6259	5322 130 80686	1N5392
6260	9331 668 80133	BZX79-B11
6261	4822 130 34281	BZX79-C15
6262	4822 130 30621	1N4148
6264	4822 130 30621	1N4148
6265	4822 130 30621	1N4148
6270	4822 130 31878	1N4003G
6271	4822 130 34382	BZX79-C8V2
6272	4822 130 31878	1N4003G
6273	4822 130 31878	1N4003G
6274	4822 130 30621	1N4148
6275	4822 130 30621	1N4148
6276	4822 130 34278	BZX79-C6V8
6277	5322 130 31504	BZX79-C3V3
6278	4822 130 30621	1N4148
6320	4822 130 30621	1N4148
6323	4822 130 30621	1N4148
6325	5322 130 80686	1N5392
6326	5322 130 80686	1N5392
6327	4822 130 31878	1N4003G
6328	4822 130 31878	1N4003G
6329	4822 130 31878	1N4003G
6330	4822 130 31878	1N4003G

TRANSISTORS & INTEGRATED CIRCUITS

7251	9322 139 22687	BD242BFP
7252	4822 130 41327	BC327-40
7253	9322 139 23687	BDX53BFP
7254	4822 130 40959	BC547B
7256	4822 130 40959	BC547B
7257	4822 130 40981	BC337-25
7258	4822 130 40959	BC547B
7259	9322 139 22687	BD242BFP
7260	4822 209 31841	L7805CP
7261	4822 130 40995	BD438
7262	4822 209 81351	LM317P
7263	4822 130 40995	BD438
7264	4822 130 40959	BC547B
7265	4822 130 40959	BC547B
7266	4822 130 40959	BC547B
7267	4822 130 40959	BC547B
7268	4822 130 41246	BC327-25
7272	4822 130 44568	BC557B
7273	4822 130 40959	BC547B
7274	4822 130 41691	BC556B
7275	4822 130 41327	BC327-40
7276	4822 130 40995	BD438
7277	4822 130 40959	BC547B
7320	4822 130 40959	BC547B
7321	4822 130 40959	BC547B
7322	4822 130 44461	BC546B
7323	4822 130 41691	BC556B
7324	4822 130 40959	BC547B
7325	4822 130 40959	BC547B
7329	9322 148 56682	STK496-070C

Note : Only the parts mentioned in this list are normal service spare parts.

ELECTRICAL PARTS LIST - CENTER/SURROUND AMPLIFIER BOARD

MISCELLANEOUS

1921	4822 265 10464	Center Speaker Terminal
1925	4822 265 10912	Surround Speaker Terminal

CAPACITORS

2901	5322 122 32261	4,7nF 10% 100V
2902	5322 122 32261	4,7nF 10% 100V
2903	4822 124 22652	2,2µF 20% 50V
2904	4822 124 22652	2,2µF 20% 50V
2905	5322 122 32331	1nF 10% 100V
2906	5322 122 32331	1nF 10% 100V
2907	5322 122 32311	470pF 10% 100V
2908	5322 122 32311	470pF 10% 100V
2909	5322 122 32334	220pF 10% 100V
2910	5322 122 32334	220pF 10% 100V
2911	4822 124 41751	47µF 20% 50V
2912	4822 124 41751	47µF 20% 50V
2913	5322 121 42386	100nF 5% 63V
2914	5322 121 42386	100nF 5% 63V
2915	5322 122 32261	4,7nF 10% 100V
2916	5322 122 32261	4,7nF 10% 100V
2917	4822 124 22652	2,2µF 20% 50V
2918	5322 122 32331	1nF 10% 100V
2919	5322 122 32334	220pF 10% 100V
2920	4822 124 41751	47µF 20% 50V
2921	4822 122 33069	33pF 5% 50V
2922	5322 121 42386	100nF 5% 63V
2923	5322 122 32261	4,7nF 10% 100V
2924	4822 126 11585	22nF +80/-20% 25V
2925	4822 126 11585	22nF +80/-20% 25V
2926	4822 126 11585	22nF +80/-20% 25V
2927	4822 126 11585	22nF +80/-20% 25V
2928	4822 124 40248	10µF 20% 63V
2929	4822 124 81144	1000µF 16V
2930	4822 124 40248	10µF 20% 63V
2931	4822 124 40248	10µF 20% 63V
2932	4822 122 33069	33pF 5% 50V
2933	4822 122 33069	33pF 5% 50V
2944	5322 122 32311	470pF 10% 100V
2945	4822 122 30043	10nF 80% 63V

RESISTORS

3903	4822 116 52234		100k 5% 0,5W
3904	4822 116 52234		100k 5% 0,5W
3905	4822 116 52291		56k 5% 0,5W
3906	4822 116 52291		56k 5% 0,5W
3907	4822 116 52226		560R 5% 0,5W
3908	4822 116 52226		560R 5% 0,5W
3909	4822 116 52291		56k 5% 0,5W
3910	4822 116 52291		56k 5% 0,5W
3911	4822 053 10478	⚠	4R7 5% 1W
3912	4822 053 10478	⚠	4R7 5% 1W
3913	4822 116 52304		82k 5% 0,5W
3915	4822 116 52289		5k6 5% 0,5W
3917	4822 116 83884		47k 5% 0,5W
3918	4822 116 83884		47k 5% 0,5W
3919	4822 116 83884		47k 5% 0,5W
3921	4822 116 52304		82k 5% 0,5W
3922	4822 116 52289		5k6 5% 0,5W
3923	4822 116 52186		22R 5% 0,5W
3924	4822 116 52291		56k 5% 0,5W
3925	4822 116 52226		560R 5% 0,5W
3926	4822 116 52291		56k 5% 0,5W
3927	4822 116 52234		100k 5% 0,5W
3929	4822 116 52234		100k 5% 0,5W
3930	4822 050 21003		10k 1% 0,6W
3931	4822 053 10478	⚠	4R7 5% 1W
3932	4822 116 52234		100k 5% 0,5W
3933	4822 050 23303		33k 1% 0,6W
3934	4822 116 83884		47k 5% 0,5W
3935	4822 050 21003		10k 1% 0,6W
3936	4822 116 52234		100k 5% 0,5W
3937	4822 050 21003		10k 1% 0,6W
3938	4822 116 52304		82k 5% 0,5W
3939	4822 116 52234		100k 5% 0,5W
3940	4822 116 52289		5k6 5% 0,5W
3941	4822 116 52257		22k 5% 0,5W
3942	4822 050 11002		1k 1% 0,4W
3943	4822 117 11744	⚠	0R22 5% 1W
3944	4822 117 11744	⚠	0R22 5% 1W
3945	4822 050 11002		1k 1% 0,4W
3946	4822 050 11002		1k 1% 0,4W
3947	4822 050 11002		1k 1% 0,4W
3948	4822 050 11002		1k 1% 0,4W
3949	4822 117 11744	⚠	0R22 5% 1W
3950	4822 117 11744	⚠	0R22 5% 1W
3951	4822 050 11002		1k 1% 0,4W
3952	4822 117 11744	⚠	0R22 5% 1W
3953	4822 117 11744	⚠	0R22 5% 1W
3954	4822 050 11002		1k 1% 0,4W
3955	4822 116 52226		560R 5% 0,5W
3956	4822 050 11002		1k 1% 0,4W
3957	4822 116 52234		100k 5% 0,5W
3962	4822 116 52304		82k 5% 0,5W
3963	4822 116 52304		82k 5% 0,5W
3964	4822 116 52304		82k 5% 0,5W
3965	4822 116 52263		2k7 5% 0,5W

COILS & FILTERS

5903	4822 157 62255	Coil 18,5 Turns
5911	4822 157 62255	Coil 18,5 Turns
5912	4822 157 62255	Coil 18,5 Turns

DIODES

6904	4822 130 30621	1N4148

ELECTRICAL PARTS LIST - CENTER/SURROUND AMPLIFIER BOARD

DIODES

6905	4822 130 30621	1N4148
6906	4822 130 30621	1N4148
6907	5322 130 31504	BZX79-C3V3

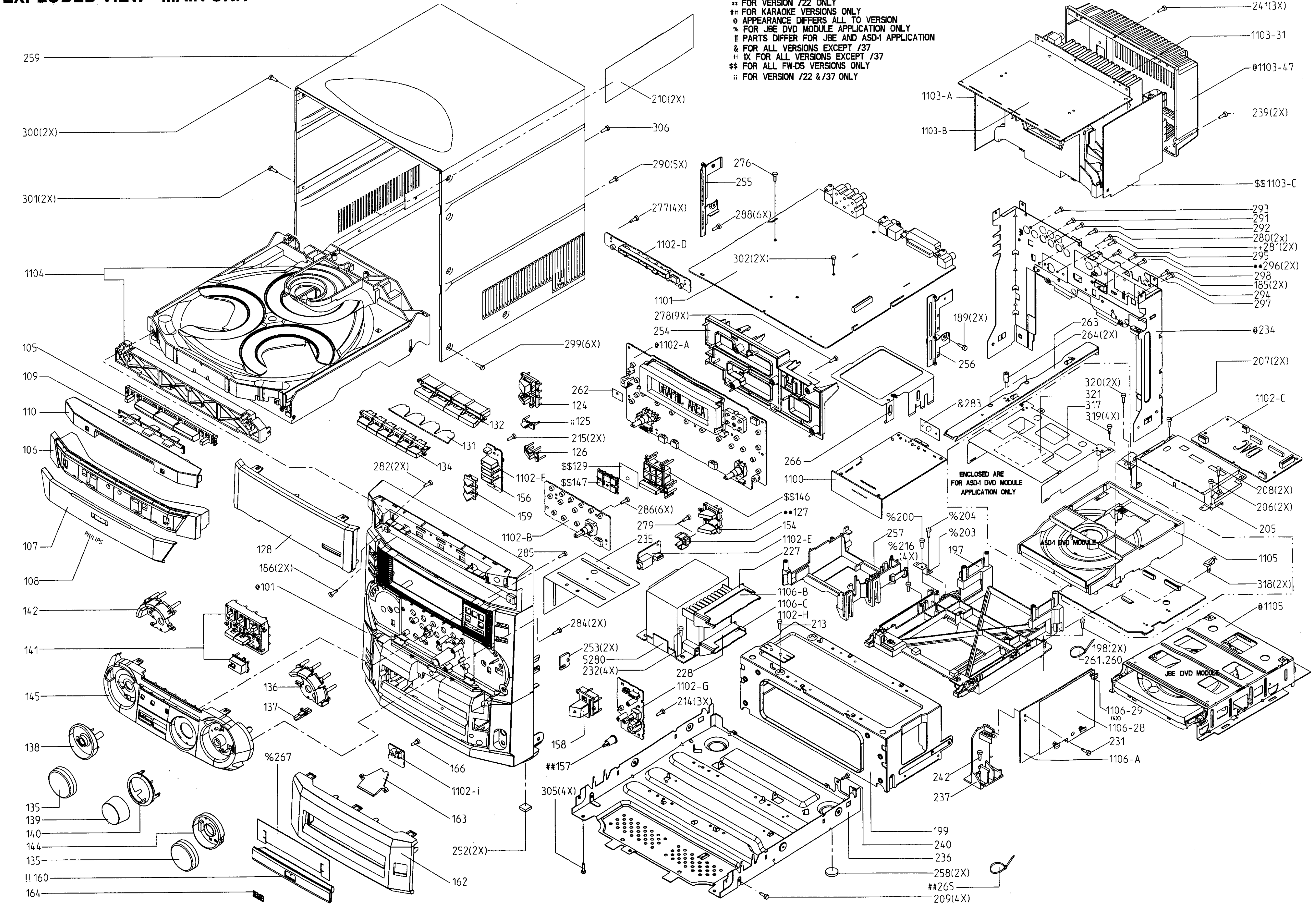
TRANSISTORS & INTEGRATED CITCUITS

7901	4822 130 40959	BC547B
7902	4822 130 40959	BC547B
7903	4822 130 40959	BC547B
7904	4822 130 44461	BC546B
7905	4822 130 41691	BC556B
7906	4822 130 44568	BC557B
7907	4822 130 40959	BC547B
7908	4822 130 40959	BC547B
7930	4822 209 17447	STK496-270

Note : Only the parts mentioned in this list are normal service spare parts.

EXPLODED VIEW - MAIN UNIT

** FOR VERSION /22 ONLY
FOR KARAOKE VERSIONS ONLY
@ APPEARANCE DIFFERS ALL TO VERSION
% FOR JBE DVD MODULE APPLICATION ONLY
!! PARTS DIFFER FOR JBE AND ASD-1 APPLICATION
& FOR ALL VERSIONS EXCEPT /37
++ 1X FOR ALL VERSIONS EXCEPT /37
$$ FOR ALL FW-D5 VERSIONS ONLY
;; FOR VERSION /22 & /37 ONLY


259
300(2X)
301(2X)
1104
105
109
110
106
107
108
PHILIPS
142
141
145
138
135
139
140
144
135
!!160
164
210(2X)
306
290(5X)
299(6X)
132
131
134
128
186(2X)
@101
282(2X)
136
137
%267
166
1102-i
163
162
252(2X)
305(4X)
285
284(2X)
124
;;125
215(2X)
126
1102-F
156
159
$$129
$$147
286(6X)
1102-B
262
@1102-A
GRAPHIC AREA
279
154
1102-E
227
235
253(2X)
5280
232(4X)
228
1102-G
214(3X)
158
##157
276
255
277(4X)
288(6X)
1102-D
302(2X)
1101
278(9X)
254
266
1100
$$146
**127
213
1106-B
1106-C
1102-H
199
240
236
258(2X)
##265
209(4X)
241(3X)
1103-31
@1103-47
239(2X)
1103-A
1103-B
$$1103-C
293
291
292
280(2X)
++281(2X)
295
**296(2X)
298
185(2X)
294
297
@234
189(2X)
256
263
264(2X)
207(2X)
320(2X)
321
317
319(4X)
&283
1102-C
ENCLOSED ARE FOR ASD-1 DVD MODULE APPLICATION ONLY
208(2X)
206(2X)
205
%200
%204
%203
257
%216 (4X)
197
ASD-1 DVD MODULE
1105
318(2X)
@1105
198(2X)
261.260
JBE DVD MODULE
1106-29 (4X)
1106-28
231
1106-A
242
237

MECHANICAL & ACCESSORIES PARTS LIST - MAIN UNIT

0101	3139 118 11820	Cabinet Front /21/21M
0101	3139 118 11790	Cabinet Front /22
0101	3139 118 13850	Cabinet Front /30
0101	3139 118 11680	Cabinet Front /37
0105	3139 118 12110	Button Set CDC Select
0106	3139 118 11070	Cover Tray CDC
0107	3139 118 11080	Cover Ornament CDC Tray
0108	4822 454 13408	Badge, Philips
0110	3139 118 12100	Cover Ornament CDC
0124	3139 118 11420	Button Power /21/21M/30
0124	3139 118 11090	Button Power /22/37
0126	3139 114 69060	Window IR
0127	3139 118 11410	Button RDS/News /22
0128	3139 118 12590	Window Display
0128	3139 118 11690	Window Display /37
0131	3139 114 68810	Lightguide Source Select
0132	3139 118 12150	Button Set Source Select
0134	3139 118 11140	Button Set Control
0135	3139 118 11110	Knob Jog Rotary
0136	3139 118 11740	Button Set Jog Sound
0138	3139 114 70220	Lightguide Jog DVD Rotary
0139	3139 118 11710	Knob Volume Rotary
0140	3139 118 11720	Ring Ornament Volume
0141	3139 118 11770	Button Set DVD Control
0142	3139 118 11730	Button Set Jog DVD
0144	3139 118 11170	Ring Ornament Jog Sound
0145	3139 118 11750	Cover Ornament Control
0146	3139 118 12170	Button Set DPL
0157	3139 118 11810	Knob Karaoke /21/21M
0158	3139 118 11780	Button Open/Close DVD
0160	3139 118 11800	Cover Tray DVD
0162	3139 118 11760	Cover Ornament Front
0164	3139 240 00010	DVD Logo
0210	3139 113 10570	Felt Cloth 0.2x160x53mm
0252	4822 462 40683	Foot Rubber (SQ)
0258	4822 462 40683	Foot Rubber (SQ)
0259	3139 114 69230	Cabinet Rear
0259	3139 114 71450	Cabinet Rear /37
0283	3139 114 70330	Plate FM Socket
0350	3139 118 77820	Left/Right LS Box
	9965 000 05697	Center Box
	9965 000 05698	Surround Box
0351	4822 303 50063	FM Aerial
0351	4822 320 11094	FM Aerial Wire /37
0356	3139 228 85410	Remote Control RC2567/01
0356	3139 228 84540	Remote Control RC2516/01
0383	4822 320 11642	Cinch Cable 1.7m
0384	4822 303 50082	AM Frame Aerial
0385	4822 321 10249 ⚠	Mains Cord
0385	4822 321 10954 ⚠	Mains Cord /30
0385	4822 321 11466 ⚠	Mains Cord /37
0386	4822 263 21092 ⚠	Adapter Plug /21
0387	3139 115 20050	Instruct. For Use /21/21M/30
0387	3139 115 20030	Instruct. For Use /22
0387	3139 116 19770	Instruct. For Use /37
1106-29	4822 466 93148	Spacer 5mm
1673	3139 110 34800	Flex Cable 19pin 18cm BD
1673	3139 110 34790	Flex Cable 23pin 18cm BD
1680	4822 320 12713	Flex Cable 6pin 34cm AD
1681	3139 110 33960	Flex Cable 4pin 12cm BD
1682	3139 110 34750	Flex Cable 5pin 8cm AD
1683	3139 110 34920	Flex Cable 8pin 28cm BD
1683	3139 110 34780	Flex Cable 4pin 28cm BD
1684	3139 110 34560	Flex Cable 19pin 28cm BD
1685	3139 110 34740	Flex Cable 8pin 18cm AD
1685	3139 110 34730	Flex Cable 12pin 18cm AD
1686	4822 320 12702	Flex Cable 6pin 14cm BD
1691	3139 110 34760	Flex Cable 9pin 28cm BD
1692	3139 110 34870	Flex Cable 9pin 22cm BD
1693	3139 110 34810	Flex Cable 16pin 14cm
1694	3139 110 34820	Flex Cable 22pin 14cm
5280	3139 118 32210 ⚠	Mains Transformer /21/21M
5280	3139 118 32220 ⚠	Mains Transformer /22/30
5280	3139 118 32200 ⚠	Mains Transformer /37

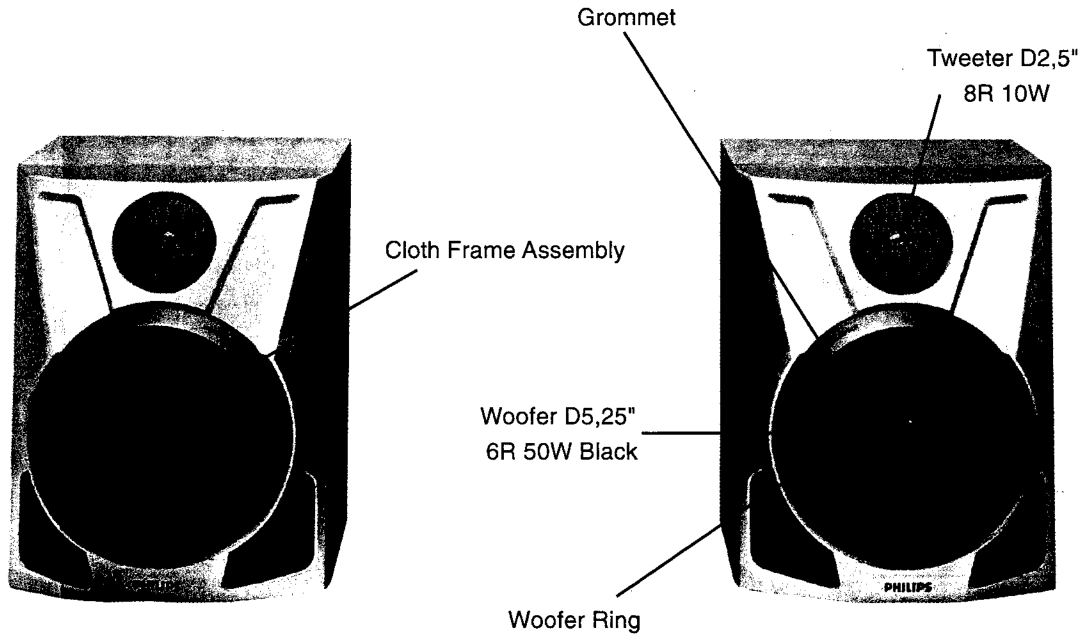
Left/Right Loudspeaker Box breakdown

9965 000 05538	Wire Assy w/Elco 2,2µF 50V
9965 000 05539	Woofer D5,25" 6R 50W Black
9965 000 04255	Tweeter D2,5" 8R 10W
9965 000 04256	Woofer Ring
9965 000 03233	Grommet
9965 000 04260	Cloth Frame Assembly

Note: Only the part mentioned in this list are normal service spare parts.

SCREW LISTS - MAIN UNIT

166	D3 x 12
185	D3 x 12
186	D3 x 25
189	D3 x 12
198	M3 x 16
200	D3 x 12
204	M3 x 16
206	M3 x 6
207	D3 x 16
208	M3 x 6
209	M3 x 6
213	M3 x 6
214	D3 x 12
215	D3 x 12
216	D3 x 12
231	D3 x 12
232	M3 x 10
239	M3 x 10
240	D3 x 12
241	M3 x 10
242	M3 x 10
276	D3 x 12
277	D3 x 12
278	D3 x 12
279	D3 x 12
280	D3 x 12
281	D3 x 12
282	D3 x 12
284	D3 x 12
285	D3 x 16
286	D3 x 12
288	D3 x 12
290	M3 x 10
291	D3 x 12
292	D3 x 12
293	D3 x 12
294	D3 x 12
295	D3 x 12
297	M3 x 10
298	M3 x 10
299	M3 x 10
300	M3 x 10
301	M3 x 10
302	D3 x 16
305	M3 x 10
306	M3 x 10



Note: The screw D3 x 10 for Woofer Ring is below the Gromet

FW-D1 & FW-D5

A00 - 167

5424

Service
Service
Service

Product Service Group CE Audio

Service Information

Already published Service Informations:

CORRECTION TO SERVICE MANUAL

* FW-D5 Mechanical & Accessories parts list

0110	3139 118 11050	Cover Ornament CDC
0144	3139 118 11220	Ring Ornamental Jog Sound
0259	3139 114 73480	Cabinet Rear /21/21M/22/30
0350	3139 118 78110	L/R L.S. Box /21/21M/22/30
0388	2422 076 00348	Scart cable 1,5M /22 only

* FW-D1/21M Mechanical & Accessories parts list

0110	3139 118 11050	Cover Ornament CDC
0144	3139 118 11220	Ring Ornamental Jog Sound
0259	3139 114 73480	Cabinet Rear
1683	3139 110 34920	Flex Cable 8pin 28cm BD

Below are corrections to the circuit diagram & parts list:

* AV Board

2831	4822 126 14491	2,2μF +80/-20% 10V
2876	4822 124 81151	22μF 20% 50V
2927	Delete	
2933	Delete	
2979	5322 122 33861	120pF 50V
3760	4822 051 20472	4k7 5% 0,1W
3791	4822 051 10102	1k 2% 0,25W
3827 - 3829	4822 117 11503	220R 1% 0,1W
3954 - 3955	4822 117 11503	220R 1% 0,1W
4408	Delete	
4658	Delete	
4674	Delete	
4710 - 4712	Delete	
4722 - 4723	Delete	
4912	Delete	
4969	4822 051 20008	0R Jumper 0805

* Front Board (applicable for FW-D1/21M only)

1472	Delete
4421	Delete
4910	Should not be deleted

* AV Board (applicable for FW-D1/21M only)

4910	Should not be deleted

CHANGES DURING PRODUCTION

*From production wk039 onwards the following was introduced to ease assembly process.

1685	3139 110 35050	Flex Cable 8pin 22cm AD
1685	3139 110 34940	Flex Cable 12pin 22cm AD
1691	3139 110 34690	Flex Cable 9pin 34cm BD

* During production new ASD-1 DVD module is introduced due to the shortage of present JBE DVD Module.
The following are adapted to cater for this new module:

0160	3139 118 14290	Cover Tray DVD ASD-1
0203	3139 241 20010	Bracket EMC
0317	3139 111 29630	Shield EMC DVD ASD-1
0318	3139 111 01420	Spring DVD ASD-1
5002	4322 020 90862	Toroid Ring

Introduction dates:
- *Non-Karaoke versions introduced from wk043 onwards*
- *Karaoke versions introduced from wk101 onwards together with new DAC board.*

For repair on this module, refer to Service Document:
DVD Module ASD-1 .... 3122 785 10840

Enclosed is an updated Exploded view drawing of the Main Unit.

AV BOARD

* From production wk039 onwards the following is introduced to adjust the Sub-woofer output to 1.4V

3726 change to 15k 5% 0,1W	4822 116 83933

* From production wk039 onwards the following was introduced to reduce volume rotating plop at Sub-woofer out.

2734 change to 1μF 20% 50V	4822 124 21913

* From production wk039 onwards a new pt. 2 board (recognized by the last digit ....3430**2** printed on the board) is introduced to improve Emission power and spectrum analyzer not responding in CDR mode.

Add	2950	4822 126 13751	47nF 50V
	3969	4822 117 10833	10k 5% 0,1W
	4910	4822 051 20008	0R Jumper 0805
	4970	4822 051 20008	0R Jumper 0805
	4971	4822 051 20008	0R Jumper 0805
	5613	4822 157 62552	Coil 2,2µH 5%

* From production wk048 a new pt. 3 board (recognized by the last digit ....34303 printed on the board) is introduced to solve:

- output intermittent when connected to wireless headphone
- subwoofer output not increasing proportionally with respect to Left/Right output when volume control is adjusted.

Add	2991	4822 124 81151	22µF 20% 50V
	3654	4822 051 20392	3k9 5% 0,1W
	3655	4822 051 20392	3k9 5% 0,1W
	3994	4822 117 10833	10k 5% 0,1W
	3995	4822 117 10833	10k 5% 0,1W
	4973	4822 051 20008	0R Jumper 0805
	4974	4822 051 20008	0R Jumper 0805

New circuit and layout diagrams are enclosed.

FRONT BOARD

*From production wk039 onwards the following was introduced to reduce emission power.

Delete	2925	(Replaced by 4913)	
Add	2818	4822 126 14585	100nF 16V
	4913	4822 051 20008	0R Jumper 0805

*From production wk039 onwards a new pt. 2 board (recognized by the last digit ....3431**2** printed on the board) is introduced to improve Emission power.

Add	2819	4822 126 14585	100nF 16V
	2948	4822 122 33177	10nF 50V
	2949	4822 122 33177	10nF 50V
	5903	4822 157 10586	Coil 2,2µH 10%
	5904	4822 157 10586	Coil 2,2µH 10%
	5905	4822 157 62552	Coil 2,2µH 5%
	5906	4822 157 10586	Coil 2,2µH 10%
	9907	Bare wire	

New circuits and layouts of the Mic & Open/Close board and DAC board are enclosed.

*From production wk039 onwards the µProcessor IC 7441 is upgraded to ver 27 with print mark: "D51S52621" to solve:

- Enable Service Key Test
- Solve Karaoke problem
- /34 autoprogram problem
- DVD errors such as surround modes & speakers, etc.

Change 7441 3139 110 52621 TMP88CU77F ver. 27

* From production wk101 the DAC breakaway part (board) will be replaced by a new DAC Board.
(See below for details)

DAC BOARD (NEW)

* From production wk101 a new DAC board is introduced (recognized by the last digit .... 34451 printed on the board) to for the following when introducing the ASD-1 Module:

- solve Left/Right interchange in FW-D1 family
- addition of IC 7933 to boost the signals level from the ASD-1 Module to IC7931 - for Karaoke versions

New parts list, circuit and layout diagrams are enclosed.

AV BOARD - CIRCUIT DIAGRAM (PART 1)

21	E2
27	F21
1504	F1
1505-B	G2
1505-C	C2
1506-A	H2
1506-B	A2
1528	D21
1530	F1
2501	E4
2502	F4
2503	E5
2504	G5
2505	D4
2506	E4
2507	D7
2508	G7
2509	D8
2510	G8
2511	C8
2512	G8
2513	D8
2514	G8
2515	D8
2516	G8
2519	D9
2520	G9
2521	D9
2522	G9
2523	C9
2524	G9
2525	B9
2526	I8
2527	B9
2528	I9
2529	B10
2530	H9
2531	C18
2532	E17
2533	B10
2534	H9
2535	B11
2536	I9
2537	B11
2538	H9
2539	C13
2540	G13
2541	B16
2542	F16
2543	B17
2544	F17
2545	B17
2546	E17
2547	C16
2548	E16
2549	B18
2550	E18
2551	D19
2552	D19
2553	F19
2554	G19
2555	E13
2556	E13
2557	D14
2558	F14
2559	D14
2560	F14
2561	D15
2562	F15
2563	C14
2564	E14
2565	C14
2566	F14
2567	B15
2568	E15
2569	C15
2570	F15
2571	C16
2572	F15
2573	J13
2574	C19
2575	H15
2576	F11
2577	F12
2578	G12
2579	G10
2580	H10
2581	H11
2582	H11
2583	D11
2584	D10
2585	J14
2586	J15
2587	J11
2588	E6
2589	F6
2590	E6
2591	F18
2592	F18
2593	C10
2594	H10
2596	E20
2597	E21
2598	B20
2601	C7
2602	H7
2603	C7
2604	I7
2605	B6
2606	H6
2607	I6
2608	I5
2609	C6
2612	H3
2613	H3
2614	H4
2615	G4
2616	H1
2617	H4
2618	D1
2619	D2
2625	C7
2626	I7
2678	F1
2715	E3
2716	F3
2717	B3
2718	C3
2719	B4
2720	C4
2721	B2
2934	F6
2966	E6
2967	C20
2983	E3
2984	F3
2985	D4
2986	F4
2987	J17
2989	F1
3501	E4
3502	F4
3503	E4
3504	G4
3505	D4
3506	E4
3507	D4
3508	F4
3509	C9
3510	G9
3511	B9
3512	I8
3513	B10
3514	I9
3515	A11
3516	H9
3517	B10
3518	I9
3519	B11
3520	I9
3521	C9
3522	H9
3523	C10
3524	H10
3525	A11
3526	J9
3527	C13
3528	G13
3529	B17
3530	E17
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3532	F17
3533	C17
3534	E17
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3536	E17
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3539	B18
3540	E18
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3543	C18
3544	D18
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3546	F19
3547	F19
3548	G19
3549	F16
3550	F16
3551	F16
3552	F16
3553	C14
3554	E14
3555	C14
3556	F14
3557	B14
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3559	C14
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3561	C15
3562	E15
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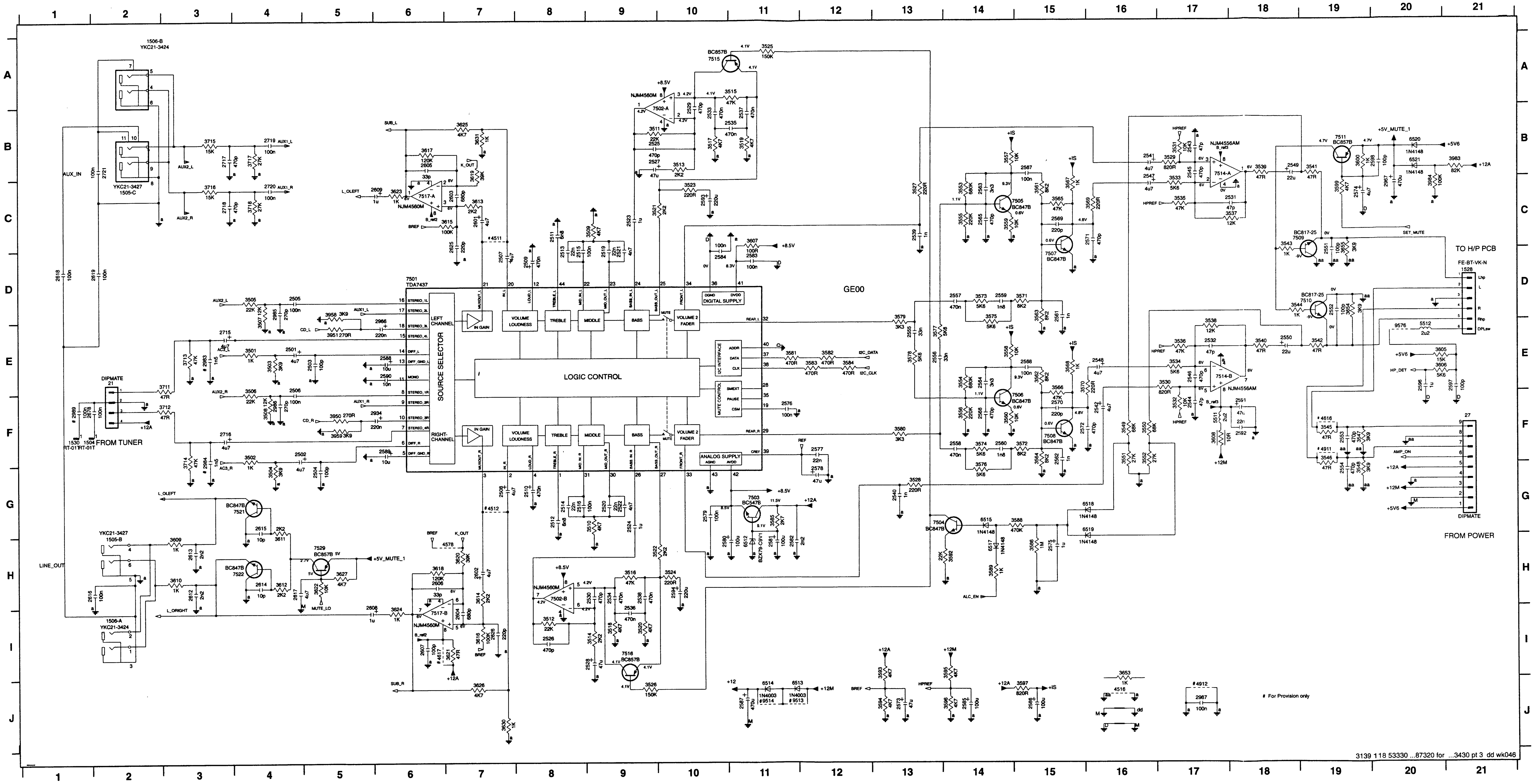
3570	E15
3571	D15
3572	F15
3573	D14
3574	F14
3575	D14
3576	G14
3577	E13
3578	E13
3579	D13
3580	F13
3581	E11
3582	E12
3583	E12
3584	E12
3585	G11
3586	H15
3588	G15
3589	H14
3592	H14
3593	I13
3594	J13
3595	I14
3596	J14
3597	J15
3599	C19
3600	B19
3605	E20
3606	E20
3607	C11
3608	F17
3609	H3
3610	H3
3611	G4
3612	H4
3613	C7
3614	H7
3615	C7
3616	I7
3617	B6
3618	H6
3619	B7
3620	H7
3621	I7
3622	H5
3623	C6
3624	I6
3625	B7
3626	J7
3627	H5
3630	J7
3631	B7
3653	I16
3654	D19
3655	D19
3711	E3
3712	F3
3713	E3
3714	F3
3715	B3
3716	C3
3717	B4
3718	C4
3950	F5
3951	E5
3958	D5
3959	F5
3983	B21
3984	C20
4511	C7
4512	G7
4516	J16
4578	H7
4616	F19
4617	I6
4911	F19
4912	J17
5511	F17
5512	E20
6512	H11
6513	J11
6514	J11
6515	G14
6517	H14
6518	G16
6519	G16
6520	B20
6521	B20
7501	D6
7502-A	B10
7502-B	H8
7503	G11
7504	G14
7505	C14
7506	F14
7507	D15
7508	F15
7509	C18
7510	D19
7511	B19
7514-A	B17
7514-B	E17
7515	A10
7516	I9
7517-A	C6
7517-B	I7
7521	G4
7522	H4
7529	H5
9513	J11
9514	J11
9576	E20



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21
A B C D E F G H I J
1506-B
YKC21-3424
AUX_IN
YKC21-3427
1505-C
AUX2_L
AUX2_R
AUX1_L
AUX1_R
DIPMATE
FROM TUNER
1530
1504
LINE_OUT
YKC21-3427
1505-B
1506-A
YKC21-3424
L_OLEFT
L_ORIGHT
+5V_MUTE_1
MUTE_LO
BC847B
7521
7522
BC857B
7529
NJM4560M
7517-A
7517-B
7502-A
7502-B
SUB_L
SUB_R
K_OUT
BREF
7501
TDA7437
SOURCE SELECTOR
LEFT CHANNEL
RIGHT-CHANNEL
IN GAIN
VOLUME LOUDNESS
TREBLE
MIDDLE
BASS
VOLUME 2 FADER
LOGIC CONTROL
DIGITAL SUPPLY
ANALOG SUPPLY
I2C INTERFACE
MUTE CONTROL
GE00
I2C_DATA
I2C_CLK
BC857B
7515
7516
BC547B
7503
BZX79-C9V1
+8.5V
+12A
+12M
+IS
BC847B
7505
7506
7507
7508
7504
ALC_EN
HPREF
NJM4556AM
7514-A
7514-B
BC857B
7511
BC817-25
7509
7510
SET_MUTE
+5V_MUTE_1
+5V6
1N4148
6520
6521
TO H/P PCB
FE-BT-VK-N
1528
HP_DET
AMP_ON
DIPMATE
FROM POWER
1N4003
#9514
#9513
# For Provision only

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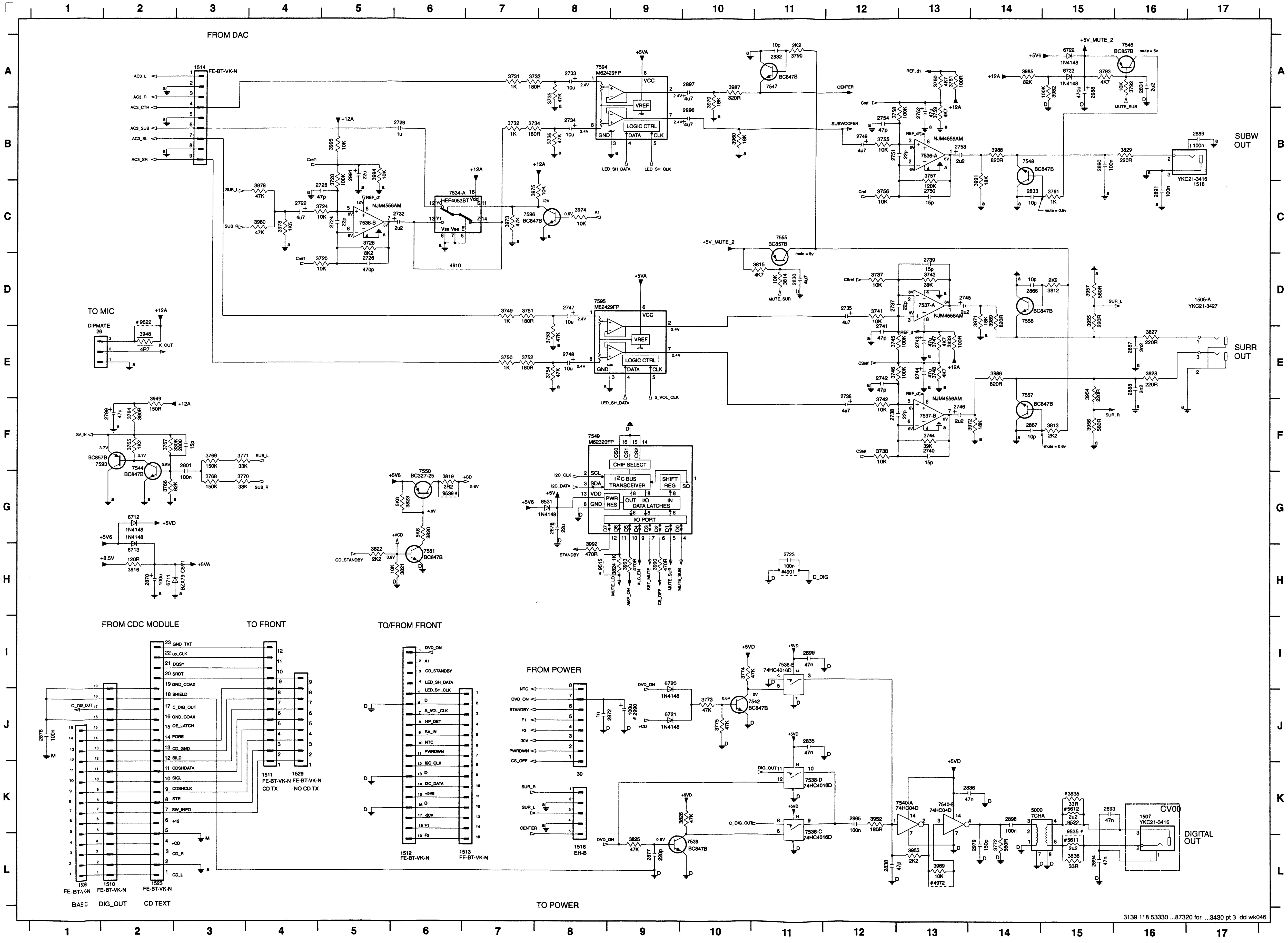
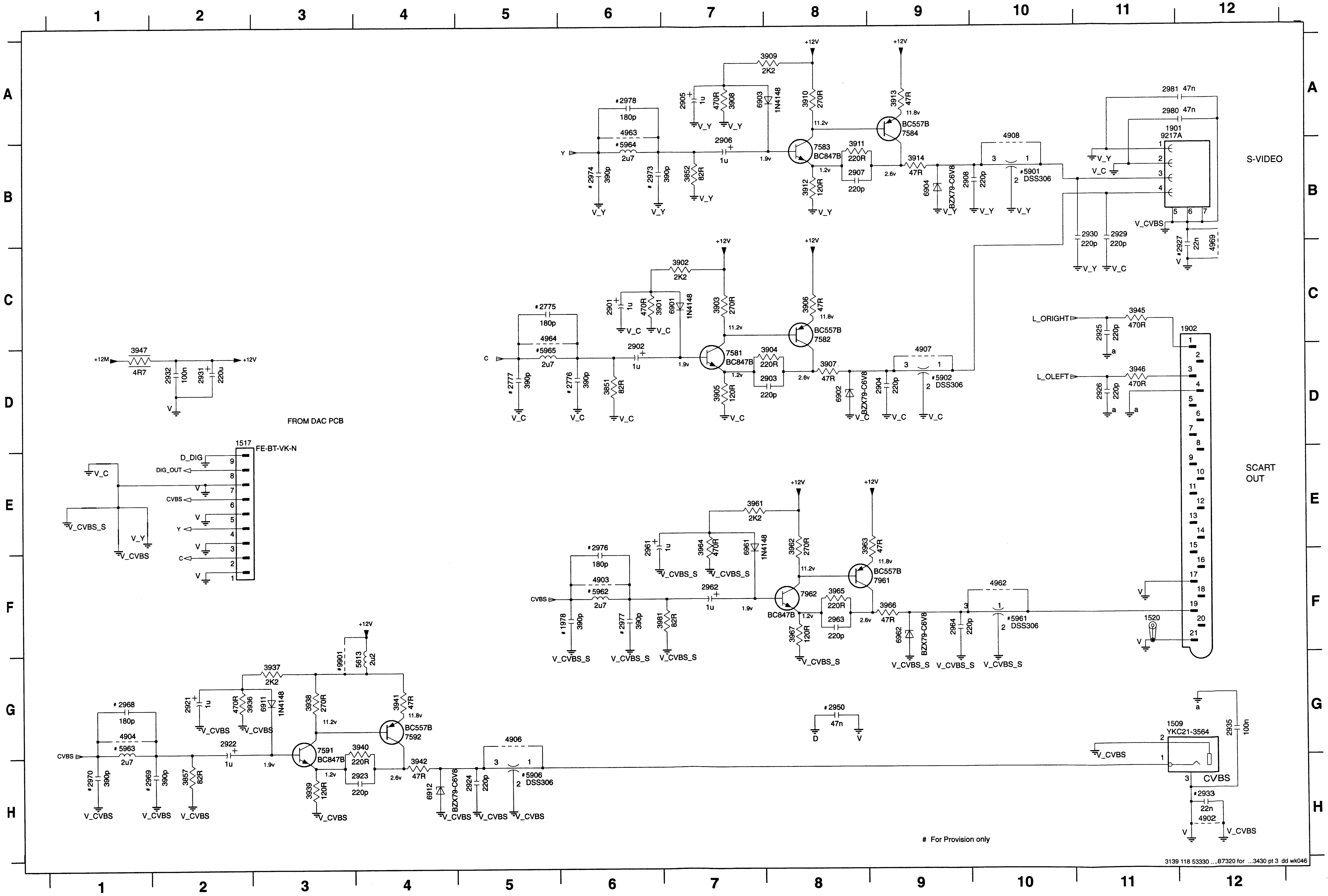
AV BOARD - CIRCUIT DIAGRAM (PART 2)


FROM DAC
1514 FE-BT-VK-N
AC3_L
AC3_R
AC3_CTR
AC3_SUB
AC3_SL
AC3_SR
7594 M62429FP
7595 M62429FP
VCC
VREF
LOGIC CTRL
GND
DATA
CLK
LED_SH_DATA
LED_SH_CLK
S_VOL_CLK
7534-A HEF4053BT
7536-A NJM4556AM
7536-B NJM4556AM
7537-A NJM4556AM
7537-B NJM4556AM
CENTER
SUBWOOFER
SUBW OUT
1518 YKC21-3416
SURR OUT
1505-A YKC21-3427
SUB_L
SUB_R
SUR_L
SUR_R
+5V_MUTE_2
MUTE_SUB
MUTE_SUR
mute = 5v
mute = 0.6v
TO MIC
DIPMATE 26
K_OUT
SA_IN
7593 BC857B
7544 BC847B
7550 BC327-25
7551 BC847B
CD_STANDBY
7549 M62320FP
CHIP SELECT
I2C BUS TRANSCEIVER
SHIFT REG
PWR RES
DATA LATCHES
I/O PORT
I2C_CLK
I2C_DATA
STANDBY
MUTE_LO
AMP_ON
ALC_EN
SET_MUTE
CS_OFF
MUTE_SUB
MUTE_SUR
D_DIG
FROM CDC MODULE
TO FRONT
TO/FROM FRONT
FROM POWER
TO POWER
1508 FE-BT-VK-N BASIC
1510 FE-BT-VK-N DIG_OUT
1523 FE-BT-VK-N CD TEXT
1511 FE-BT-VK-N CD TX
1529 FE-BT-VK-N NO CD TX
1512 FE-BT-VK-N
1513 FE-BT-VK-N
1516 EH-B
7538-B 74HC4016D
7538-C 74HC4016D
7538-D 74HC4016D
7540-A 74HC04D
7540-B 74HC04D
7539 BC847B
7542 BC847B
5000 7CHA
CV00
1507 YKC21-3416
DIGITAL OUT
DVD_ON
DIG_OUT
C_DIG_OUT
3139 118 53330 ...87320 for ...3430 pt 3 dd wk046

26	E2
30	K8
1505-A	D17
1507	K16
1508	L1
1510	L2
1511	K4
1512	L6
1513	L6
1514	A3
1516	L8
1518	C17
1523	L2
1529	K4
2722	C4
2723	H11
2724	C5
2726	D5
2728	C5
2729	B6
2732	C6
2733	A8
2734	B8
2735	D12
2736	E12
2737	D12
2738	F12
2739	D13
2740	F13
2741	E12
2742	E12
2743	E13
2744	E13
2745	D13
2746	F13
2747	D8
2748	E8
2749	B12
2750	C13
2751	B12
2752	B13
2753	B13
2754	B12
2799	F2
2800	F3
2801	F3
2830	D11
2831	A16
2832	A11
2833	C14
2835	J11
2836	K14
2838	L12
2866	D14
2867	F14
2870	H2
2876	G8
2877	L9
2878	J1
2887	E16
2888	E16
2889	B17
2890	B15
2891	C16
2893	K15
2894	L15
2896	B10
2897	A10
2898	K14
2899	I11
2965	K12
2972	J9
2979	L14
2988	A15
2990	J9
2991	B5
3720	D5
3724	C5
3726	C5
3728	C5
3731	A7
3732	B7
3733	A7
3734	B7
3735	A8
3736	B8
3737	D12
3738	F12
3741	D12
3742	F12
3743	D13
3744	F13
3745	E12
3746	E12
3747	E13
3748	E13
3749	D7
3750	E7
3751	D7
3752	E7
3753	E8
3754	E8
3755	B12
3756	C12
3757	B13
3758	B12
3759	B13
3760	A13
3761	A13
3764	F2
3765	F2
3766	G2
3767	F2
3768	G3
3769	F3
3770	G3
3771	F3
3772	L14
3773	J10
3774	I10
3775	J10
3790	A11
3791	C15
3792	A16
3793	A15
3812	D15
3813	F15
3814	D11
3815	D11
3816	H2
3819	G6
3820	G6
3821	H6
3822	H5
3823	G6
3824	H9
3825	L9
3826	K10
3827	E16
3828	E16
3829	B16
3833	E13
3835	K15
3836	L15
3948	E2
3949	F2
3952	K12
3953	L13
3954	E15
3955	D15
3956	F15
3957	D15
3960	B10
3969	L13
3970	A10
3971	D14
3972	F14
3973	C7
3974	C8
3975	C7
3978	C4
3979	C4
3980	C4
3982	A15
3985	A14
3986	E14
3987	A10
3988	B14
3989	D14
3990	H9
3991	C14
3992	H8
3993	H9
3994	B5
3995	B5
4901	H11
4910	D6
4972	L13
5000	K14
5611	L15
5612	K15
6531	G8
6711	H2
6712	G2
6713	H2
6720	I9
6721	J9
6722	A15
6723	A15
7534-A	C6
7536-A	B13
7536-B	C5
7537-A	D13
7537-B	F13
7538-B	I11
7538-C	K11
7538-D	K11
7539	L10
7540-A	K12
7540-B	K13
7542	J10
7544	F2
7546	A16
7547	A11
7548	B14
7549	F8
7550	G6
7551	H6
7555	C11
7556	D14
7557	E14
7593	F2
7594	A8
7595	D8
7596	C7
9515	H8
9522	K15
9535	K15
9539	G6
9622	D2

AV BOARD - CIRCUIT DIAGRAM (PART 3)

1509	G11
1517	D2
1520	F11
1901	A11
1902	C12
1978	F6
2775	C5
2776	D6
2777	D5
2901	C6
2902	D6
2903	D8
2904	D9
2905	A7
2906	B7
2907	B8
2908	B9
2921	G2
2922	G2
2923	H4
2924	H5
2925	C11
2926	D11
2927	C12
2929	B11
2930	B11
2931	D2
2932	D2
2933	H12
2935	G12
2950	G8
2961	E6
2962	F7
2963	F8
2964	F9
2968	G1
2969	H1
2970	H1
2973	B6
2974	B6
2976	E6
2977	F6
2978	A6
2980	A11
2981	A11
3851	D6
3852	B7
3857	H2
3901	C6
3902	C7
3903	C7
3904	D8
3905	D7
3906	C8
3907	D8
3908	A7
3909	A8
3910	A8
3911	B8
3912	B8
3913	A9
3914	B9
3936	G2
3937	G3
3938	G3
3939	H3
3940	G4
3941	G4
3942	H4
3945	C11
3946	D11
3947	D1
3961	E7
3962	E8
3963	E8
3964	E7
3965	F8
3966	F9
3967	F8
3981	F6
4902	H12
4903	F6
4904	G1
4906	G5
4907	D9
4908	A10
4962	F10
4963	A6
4964	C5
4969	C12
5613	G4
5901	B10
5902	D9
5906	H5
5961	F10
5962	F6
5963	G1
5964	B6
5965	D5
6901	C7
6902	D8
6903	A7
6904	B9
6911	G3
6912	H4
6961	E7
6962	F9
7581	D7
7582	C8
7583	B8
7584	A9
7591	G3
7592	G4
7961	F9
7962	F8
9901	G3


1
2
3
4
5
6
7
8
9
10
11
12
A
B
C
D
E
F
G
H
S-VIDEO
1901
9217A
SCART OUT
1902
FROM DAC PCB
1517
FE-BT-VK-N
D_DIG
DIG_OUT
CVBS
Y
C
V_C
V_Y
V_CVBS
V_CVBS_S
+12M
+12V
3947
4R7
2932
100n
2931
220u
1509
YKC21-3564
CVBS
1520
L_ORIGHT
L_OLEFT
3945
470R
3946
470R
7583
BC847B
7584
BC557B
7581
BC847B
7582
BC557B
7962
BC847B
7961
BC557B
7591
BC847B
7592
BC557B
1N4148
BZX79-C6V8
DSS306
4908
4907
4962
4906
#2950
47n
2935
100n
#2933
22n
4902

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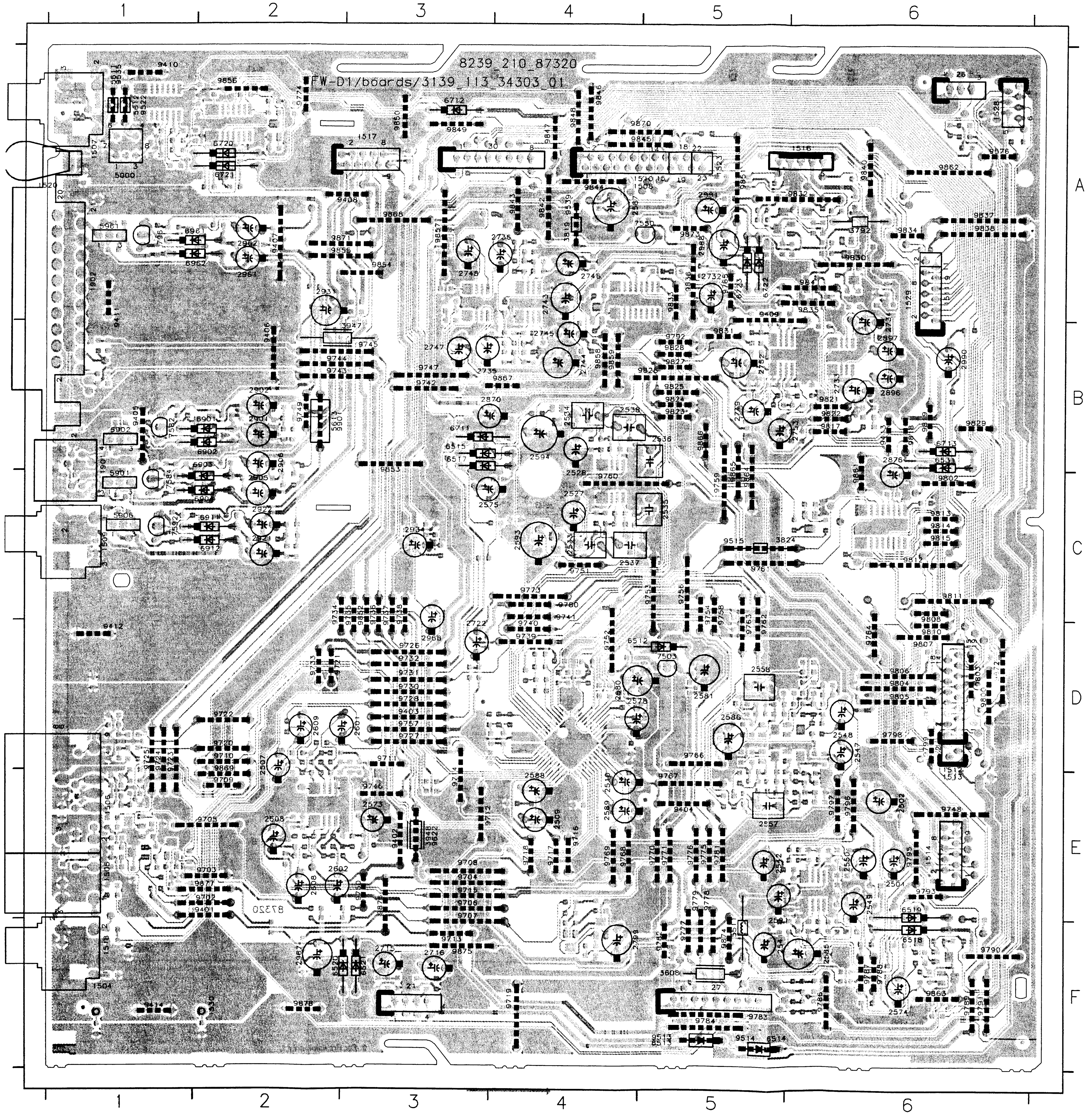
AV BOARD - COMPONENT LAYOUT



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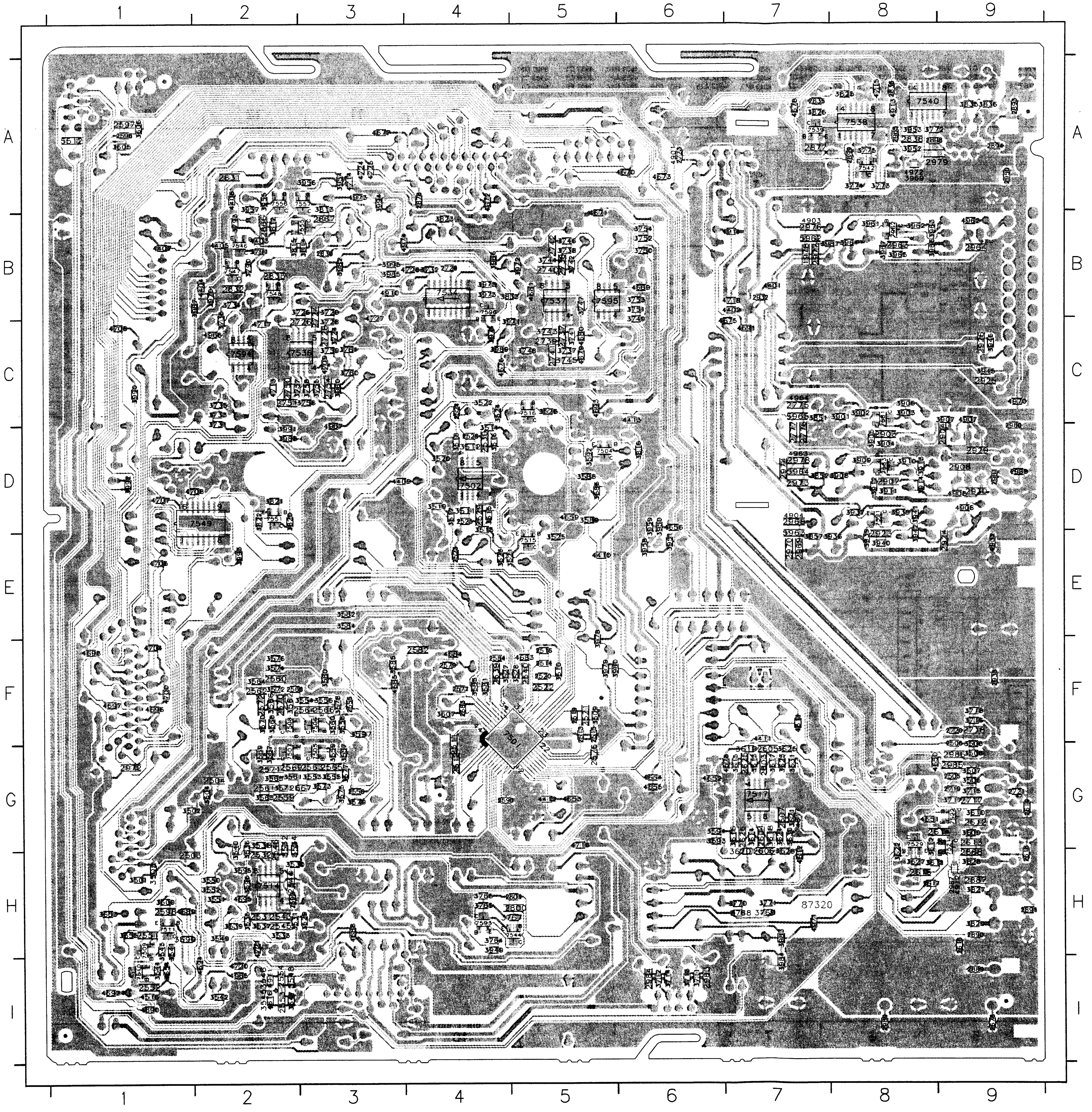
26	A6
27	F5
30	A3
1504	F1
1505	E1
1506	E1
1507	A1
1508	A5
1509	C1
1510	A5
1511	A6
1512	D6
1513	E6
1514	E6
1516	A6
1517	A3
1518	F1
1520	A1
1523	A5
1528	A6
1529	A6
1530	F2
1901	B1
1902	A1
2501	E6
2502	E6
2507	D2
2508	E2
2509	E4
2510	E4
2527	C4
2528	C4
2533	C4
2534	B4
2535	C5
2536	B5
2537	C4
2538	B4
2541	F5
2542	E5
2547	D6
2548	D6
2549	E6
2550	E6
2557	E5
2558	D5
2573	E3
2574	F6
2575	C3
2578	D4
2580	D4
2581	D5
2585	F6
2586	D5
2587	A4
2588	E4
2589	E4
2591	E5
2593	C4
2594	B4
2601	D3
2602	E2
2608	E2
2609	D2
2715	F3
2716	F3
2722	D3
2732	A5
2733	B6
2734	B6
2735	B3
2736	A4
2743	A4
2744	B4
2745	B4
2746	A4
2747	B3
2748	A3
2749	B5
2752	B5
2753	B6
2799	F4
2870	B3
2876	B6
2896	B6
2897	B6
2901	B2
2902	B2
2905	C2
2906	B2
2921	C2
2922	C2
2931	A2
2934	C3
2961	A2
2962	A2
2966	D3
2967	F2
2988	A5
2990	B6
2991	A5
3608	F5
3792	A6
3819	A4
3824	C5
3947	B3
3948	E3
5000	A1
5511	F5
5611	A1
5612	A1
5613	B2
5901	C1
5902	B1
5906	C1
5961	A1
6512	D4
6513	F5
6514	F5
6515	B3
6517	B3
6518	F6
6519	E6
6520	F2
6521	F3
6531	B6
6711	B3
6712	A3
6713	B6
6720	A2
6721	A2
6722	A5
6723	A5
6901	B2
6902	B2
6903	B2
6904	C2
6911	C2
6912	C2
6961	A1
6962	A2
7503	D5
7550	A5
7582	B1
7584	C1
7592	C1
7961	A1
9401	E2
9402	E3
9403	D3
9404	E5
9405	B1
9406	B2
9407	A2
9408	A3
9409	A5
9410	A1
9411	A1
9412	D1
9413	B6
9414	F1
9513	F5
9514	F5
9515	C5
9522	A1
9535	A1
9539	A4
9576	A6
9622	E3
9702	E2
9703	E2
9704	E3
9705	E2
9706	E3
9707	E3
9708	E3
9709	E2
9710	D2
9711	D3
9712	E3
9713	F3
9714	E3
9715	E3
9716	E4
9717	E4
9718	E4
9719	F4
9720	D2
9721	D2
9722	D2
9723	D1
9724	D1
9725	D1
9726	D3
9727	D3
9728	D3
9730	D3
9731	D3
9732	D3
9733	D2
9734	C2
9735	C3
9736	C3
9737	C3
9738	C3
9739	D4
9740	D4
9741	C4
9742	B3
9743	B2
9744	B2
9745	B3
9746	E3
9747	B3
9748	E6
9749	B2
9750	E3
9751	C4
9752	D4
9753	C5
9754	C5
9756	C5
9757	D3
9758	C5
9759	C5
9760	C4
9761	C5
9762	D5
9763	D5
9764	D6
9765	A5
9766	D5
9767	E5
9768	E4
9769	E4
9770	E5
9771	E5
9773	C4
9774	A2
9775	E5
9776	E5
9777	F5
9778	E5
9779	E5
9780	C4
9781	E5
9782	F5
9783	F5
9784	F5
9786	F6
9787	F6
9788	F6
9789	F6
9790	F6
9791	F6
9792	B5
9793	E6
9795	E6
9796	E6
9797	E6
9798	D6
9799	D6
9800	D6
9802	C6
9803	D6
9804	D6
9805	D6
9806	D6
9807	D6
9808	C6
9810	D6
9811	C6
9812	C6
9813	C6
9814	C6
9815	C6
9817	B6
9818	B6
9819	B6
9821	B6
9822	B6
9823	B5
9824	B5
9825	B5
9826	B5
9827	B5
9828	B5
9829	B6
9830	A6
9831	B5
9832	A6
9833	A5
9834	A6
9835	A6
9836	A5
9837	A6
9838	A6
9840	A6
9841	A6
9842	A4
9843	A4
9844	A4
9845	A4
9846	A4
9847	A4
9848	A4
9849	A3
9850	A3
9851	A5
9852	C3
9853	C3
9854	A3
9855	A2
9856	A2
9857	A3
9858	B4
9859	B4
9861	C6
9862	A6
9863	F6
9864	C5
9865	C5
9866	B5
9867	B4
9868	A3
9869	E2
9870	A4
9871	A2
9872	D6
9873	A5
9874	F5
9875	F3
9876	E3
9877	E2
9878	F2
9901	B2

AV BOARD - CHIP LAYOUT

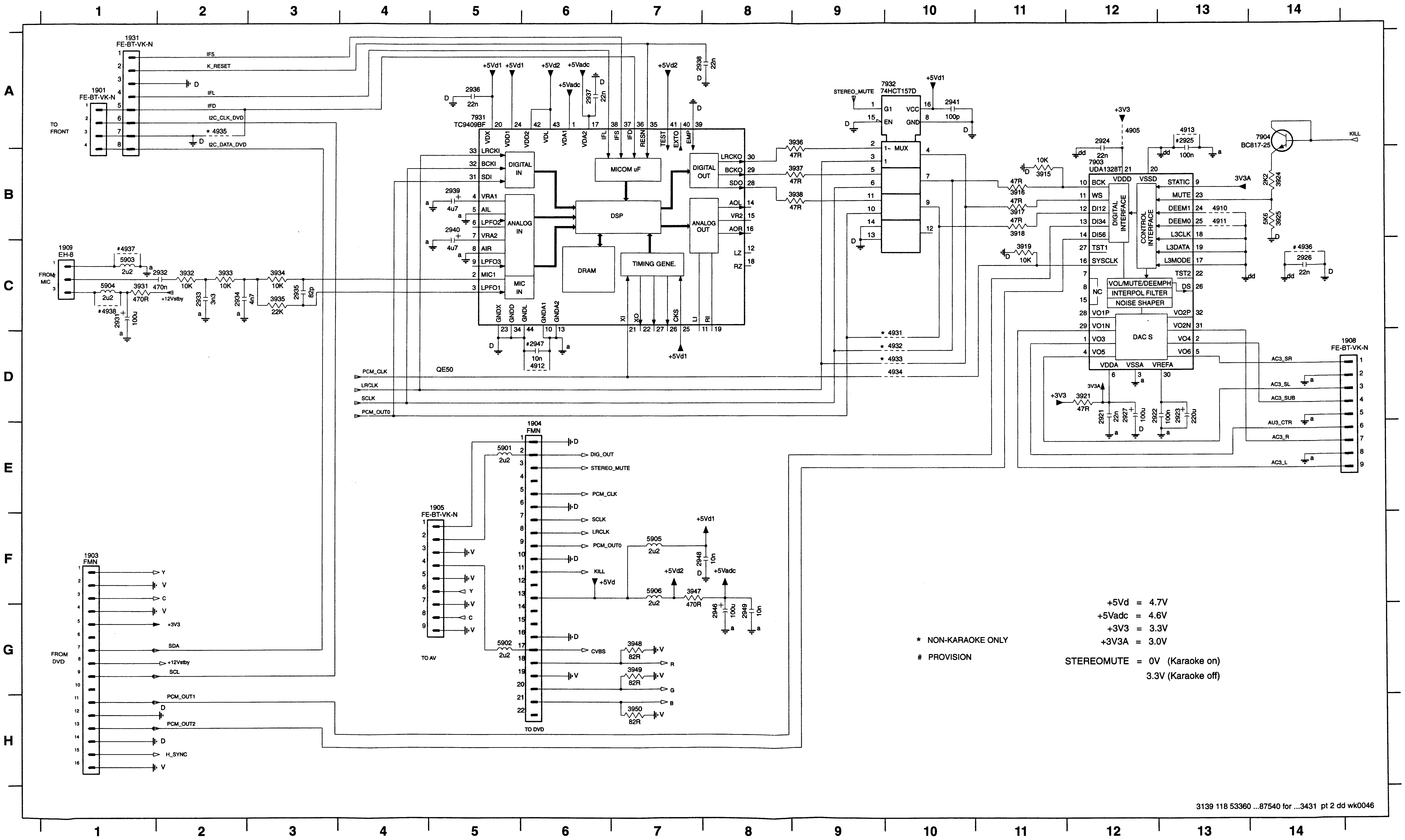


1978	B7	2970	E7	3712	I6	3994	A3	7595	B5
2503	H1	2972	G1	3713	I6	3995	B3	7596	B4
2504	G2	2973	D7	3714	I6	4401	B7	7962	B8
2505	G9	2974	D7	3715	G9	4402	B7		
2506	G9	2976	B7	3716	F9	4403	B2		
2511	G4	2977	B7	3717	G9	4404	B2		
2512	G4	2978	D7	3718	F9	4405	B2		
2513	F5	2979	A9	3720	B3	4406	A2		
2514	F5	2980	D9	3724	C3	4407	B1		
2515	F5	2981	D9	3726	B3	4409	D3		
2516	F5	2983	I6	3728	C3	4410	E5		
2519	F5	2984	I6	3731	C2	4411	F7		
2520	F5	2985	G9	3732	B4	4412	G5		
2521	F5	2986	G9	3733	C2	4413	C6		
2522	F5	2987	H9	3734	B2	4511	F7		
2523	E4	2989	I8	3735	C2	4512	H7		
2524	C4	3501	H1	3736	C2	4516	I1		
2525	D4	3502	G1	3737	C5	4578	G7		
2526	D4	3503	H1	3738	B5	4616	I2		
2529	D4	3504	G2	3741	C5	4617	G7		
2530	D4	3505	G9	3742	B5	4650	G8		
2531	H2	3506	G9	3743	C5	4651	G8		
2532	H2	3507	G9	3744	B5	4652	G6		
2539	F4	3508	G9	3745	C5	4653	G5		
2540	F5	3509	F5	3746	B5	4654	G6		
2543	H2	3510	F5	3747	B5	4655	G6		
2544	H2	3511	D4	3748	C5	4656	D6		
2545	H2	3512	D4	3749	C6	4659	D5		
2546	G2	3513	D4	3750	B6	4669	B6		
2551	H1	3514	D4	3751	B6	4670	A6		
2552	I1	3515	D4	3752	B6	4671	B5		
2553	I2	3516	D4	3753	B6	4672	A4		
2554	I2	3517	D4	3754	B6	4673	A6		
2555	F3	3518	D4	3755	C3	4675	C7		
2556	G3	3519	D4	3756	C3	4676	C4		
2559	G2	3520	D4	3757	C3	4677	A3		
2560	F2	3521	E5	3758	C3	4678	A7		
2561	G2	3522	C4	3759	C3	4679	C5		
2562	F2	3523	E4	3760	C3	4680	C5		
2563	G3	3524	C4	3761	C3	4681	B5		
2564	F3	3525	E5	3764	H4	4683	F5		
2565	G3	3526	C5	3765	H4	4684	F4		
2566	F3	3527	F4	3766	H4	4685	F3		
2567	G3	3528	F5	3767	H5	4688	H3		
2568	F2	3529	H3	3768	H7	4689	H1		
2569	G2	3530	H2	3769	H7	4690	I1		
2570	F2	3531	H2	3770	H7	4691	C7		
2571	G2	3532	G2	3771	H7	4692	I1		
2572	F2	3533	H2	3772	A8	4693	C5		
2576	G5	3534	G2	3773	A8	4694	I2		
2577	F4	3535	H2	3774	A8	4695	H2		
2579	F4	3536	G2	3775	A8	4696	F1		
2582	F4	3537	H2	3790	B2	4697	F1		
2583	F4	3538	G2	3791	B2	4698	F1		
2584	F4	3539	H2	3793	B2	4700	F1		
2590	G4	3540	G2	3812	B2	4704	F1		
2592	H2	3541	H1	3813	A3	4705	E1		
2596	A1	3542	I2	3814	B3	4706	C1		
2597	A1	3543	H1	3815	B2	4707	D1		
2598	H1	3544	I1	3816	D6	4708	D2		
2603	G7	3545	I2	3820	D2	4709	C3		
2604	G7	3546	I2	3821	D2	4713	C2		
2605	G7	3547	I2	3822	D2	4714	A3		
2606	H7	3548	I2	3823	B4	4715	A8		
2607	G7	3549	H2	3825	A8	4716	G5		
2612	G9	3550	H2	3826	A7	4717	C2		
2613	G9	3551	H2	3827	H9	4718	B7		
2614	G9	3552	H2	3828	H9	4720	I2		
2615	H8	3553	G3	3829	H9	4721	H2		
2616	H9	3554	F3	3833	B5	4724	A3		
2617	H8	3555	G3	3835	A9	4725	A3		
2618	H9	3556	F3	3836	A9	4726	B4		
2619	G9	3557	G3	3851	C7	4727	B3		
2625	G7	3558	F3	3852	D7	4901	A6		
2626	G7	3559	G3	3857	E7	4902	E9		
2678	I9	3560	F3	3901	C8	4903	B7		
2717	G9	3561	G2	3902	C8	4904	D7		
2718	F9	3562	F2	3903	C8	4906	D9		
2719	G9	3563	G2	3904	D8	4907	C9		
2720	F9	3564	F2	3905	D8	4908	D9		
2721	G9	3565	G2	3906	C8	4910	B3		
2723	A6	3566	F2	3907	C9	4911	I2		
2724	B3	3567	G2	3908	D8	4912	H9		
2726	C3	3568	F2	3909	D8	4913	A8		
2728	C3	3569	G2	3910	D8	4914	B7		
2729	B4	3570	F2	3911	D8	4962	B9		
2737	C5	3571	G2	3912	D8	4963	D7		
2738	B5	3572	F2	3913	D8	4964	C7		
2739	C5	3573	G3	3914	D8	4965	I2		
2740	B5	3574	F2	3936	E8	4966	C2		
2741	C5	3575	G3	3937	D8	4967	D3		
2742	B5	3576	F2	3938	D8	4969	D9		
2750	C2	3577	G3	3939	E8	4970	C9		
2751	C2	3578	F3	3940	E8	4971	H7		
2754	C3	3579	G3	3941	D8	4972	A8		
2775	C7	3580	F3	3942	E8	4973	A3		
2776	D7	3581	F4	3945	C9	4974	B4		
2777	D7	3582	E3	3946	C9	5512	A1		
2800	H5	3583	F4	3949	H4	5962	B7		
2801	H5	3584	E3	3950	D6	5963	E7		
2830	B3	3585	F3	3951	E6	5964	D7		
2831	A2	3586	D5	3952	A8	5965	C7		
2832	B2	3588	D5	3953	A8	7501	F5		
2833	B2	3589	D5	3954	A3	7502	D4		
2835	A7	3592	D5	3955	A2	7504	D5		
2836	A8	3593	G6	3956	A3	7505	G3		
2838	A8	3594	G6	3957	A2	7506	F3		
2866	B2	3595	H2	3958	E6	7507	G2		
2867	B3	3596	H2	3959	D6	7508	F2		
2877	A7	3597	F3	3960	C3	7509	H1		
2878	A4	3599	H1	3961	B8	7510	I1		
2887	H9	3600	H1	3962	B8	7511	H1		
2888	H9	3605	A1	3963	B8	7514	H2		
2889	I9	3606	A1	3964	B8	7515	E5		
2890	H9	3607	F4	3965	B8	7516	C5		
2891	H9	3609	G9	3966	B8	7517	G7		
2893	A9	3610	G9	3967	B8	7521	G9		
2894	A9	3611	H8	3969	A8	7522	G9		
2898	A8	3612	G8	3970	B2	7529	G8		
2899	A8	3613	G7	3971	C5	7534	B4		
2903	D8	3614	G7	3972	B5	7536	C3		
2904	D9	3615	G7	3973	B4	7537	B5		
2907	D8	3616	G7	3974	C4	7538	A8		
2908	D9	3617	G7	3975	B4	7539	A7		
2923	E8	3618	G7	3978	F5	7540	A8		
2924	E9	3619	G7	3979	F5	7542	A8		
2925	C9	3620	H7	3980	F5	7544	H5		
2926	C9	3621	G7	3981	B8	7546	B2		
2927	D9	3622	H8	3982	B3	7547	B2		
2929	D9	3623	G7	3983	H7	7548	B2		
2930	D9	3624	G7	3984	I7	7549	D2		
2932	B7	3625	G7	3985	B3	7551	D2		
2933	E9	3626	H7	3986	B4	7555	B3		
2935	F9	3627	H8	3987	B2	7556	A2		
2950	A9	3630	G7	3988	D2	7557	A3		
2963	B8	3631	G7	3989	C4	7581	C8		
2964	B9	3653	H1	3990	C1	7583	D8		
2965	A8	3654	I1	3991	D2	7591	D8		
2968	D7	3655	H1	3992	D1	7593	H4		
2969	E7	3711	I6	3993	E2	7594	C2		

FRONT BOARD - DAC PART
(Not for Karaoke version with ASD-1 Module application)

CIRCUIT DIAGRAM

1901	A1
1903	F1
1904	E6
1905	E5
1908	D14
1909	C1
1931	A1
2921	D12
2922	D12
2923	D13
2924	A12
2925	A13
2926	C14
2927	D12
2931	C1
2932	C2
2933	C2
2934	C2
2935	C3
2936	A5
2937	A6
2938	A7
2939	B5
2940	B5
2941	A10
2946	G8
2947	D6
2948	F7
2949	G8
3915	B11
3916	B11
3917	B11
3918	B11
3919	C11
3921	D12
3924	B14
3925	B14
3931	C1
3932	C2
3933	C2
3934	C3
3935	C3
3936	A9
3937	B9
3938	B9
3947	F7
3948	G7
3949	G7
3950	H7
4905	A12
4910	B13
4911	B13
4912	D6
4913	A13
4931	D10
4932	D10
4933	D10
4934	D10
4935	A2
4936	C14
4937	C1
4938	C1
5901	E5
5902	G5
5903	C1
5904	C1
5905	F7
5906	F7
7903	B12
7904	A14
7931	A5
7932	A9


1931
FE-BT-VK-N
1901
FE-BT-VK-N
TO FRONT
IFS
K_RESET
IFL
IFD
I2C_CLK_DVD
I2C_DATA_DVD
* 4935
7931
TC9409BF
LRCKI
BCKI
SDI
VRA1
AIL
LPFO2
VRA2
AIR
LPFO3
MIC1
LPFO1
DIGITAL IN
ANALOG IN
MIC IN
MICOM uF
DSP
DRAM
TIMING GENE.
DIGITAL OUT
ANALOG OUT
LRCKO
BCKO
SDO
AOL
VR2
AOR
LZ
RZ
GNDX
GNDD
GNDL
GNDA1
GNDA2
XI
XO
CKS
LI
RI
+5Vd1
+5Vd2
+5Vadc
+5Vd
2936 22n
2937 22n
2938 22n
2939 4u7
2940 4u7
#2947 10n
4912
1909
EH-B
FROM MIC
#4937
5903 2u2
5904 2u2
#4938
2932 470n
3932 10K
3933 10K
3934 10K
3935 22K
3931 470R
2931 100u
2933 3n3
2934 4n7
2935 82p
+12Vstby
STEREO_MUTE
7932
74HCT157D
G1
EN
VCC
GND
1- MUX
2941 100p
3936 47R
3937 47R
3938 47R
* 4931
* 4932
* 4933
4934
PCM_CLK
LRCLK
SCLK
PCM_OUT0
QE50
+3V3
4905
2924 22n
4913
#2925 100n
7903
UDA1328T
BCK
WS
DI12
DI34
DI56
TST1
SYSCLK
NC
VO1P
VO1N
VO3
VO5
VDDD
VSSD
DIGITAL INTERFACE
CONTROL INTERFACE
STATIC
MUTE
DEEM1
DEEM0
L3CLK
L3DATA
L3MODE
TST2
DS
VOL/MUTE/DEEMPH
INTERPOL FILTER
NOISE SHAPER
DAC S
VO2P
VO2N
VO4
VO6
VDDA
VSSA
VREFA
3915 10K
3916 47R
3917 47R
3918 47R
3919 10K
4910
4911
#4936
2926 22n
3V3A
7904
BC817-25
KILL
3924 2K2
3925 5K6
3921 47R
2921 22n
2927 100u
2922 100n
2923 220u
1908
FE-BT-VK-N
AC3_SR
AC3_SL
AC3_SUB
AU3_CTR
AC3_R
AC3_L
1904
FMN
DIG_OUT
STEREO_MUTE
PCM_CLK
SCLK
LRCLK
PCM_OUT0
KILL
CVBS
R
G
B
TO DVD
5901 2u2
5902 2u2
1905
FE-BT-VK-N
TO AV
5905 2u2
5906 2u2
3947 470R
2948 10n
2946 100u
2949 10n
3948 82R
3949 82R
3950 82R
1903
FMN
FROM DVD
Y
V
C
+3V3
SDA
+12Vstby
SCL
PCM_OUT1
PCM_OUT2
H_SYNC
A
B
C
D
E
F
G
H
1
2
3
4
5
6
7
8
9
10
11
12
13
14

* NON-KARAOKE ONLY

# PROVISION

+5Vd = 4.7V
+5Vadc = 4.6V
+3V3 = 3.3V
+3V3A = 3.0V

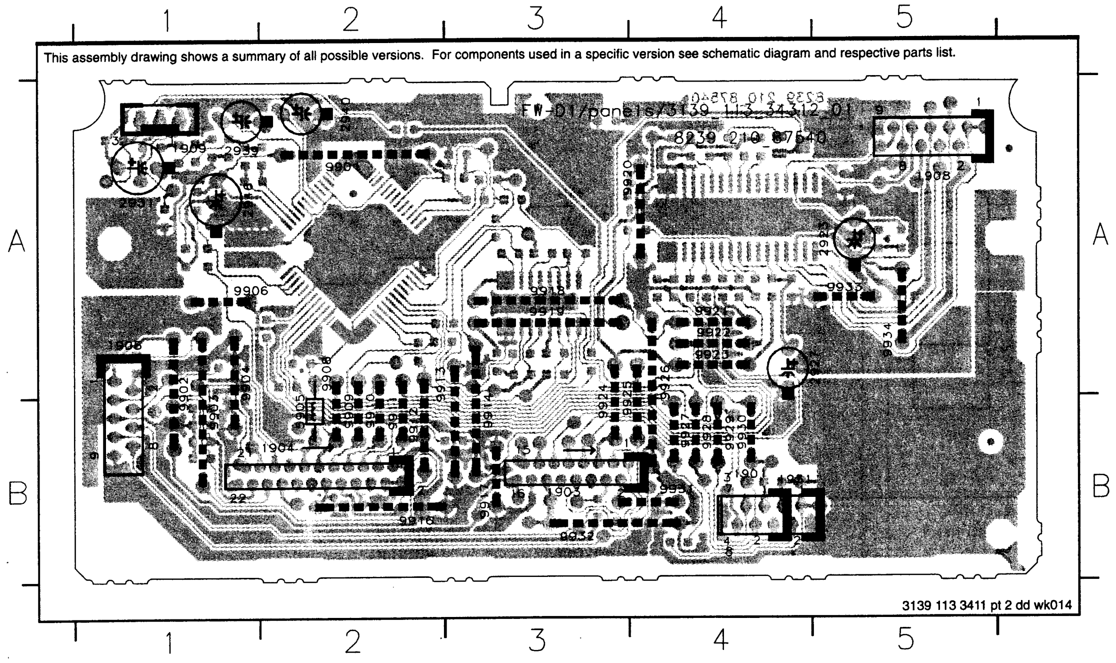
STEREOMUTE = 0V (Karaoke on)
3.3V (Karaoke off)

3139 118 53360 ...87540 for ...3431 pt 2 dd wk0046

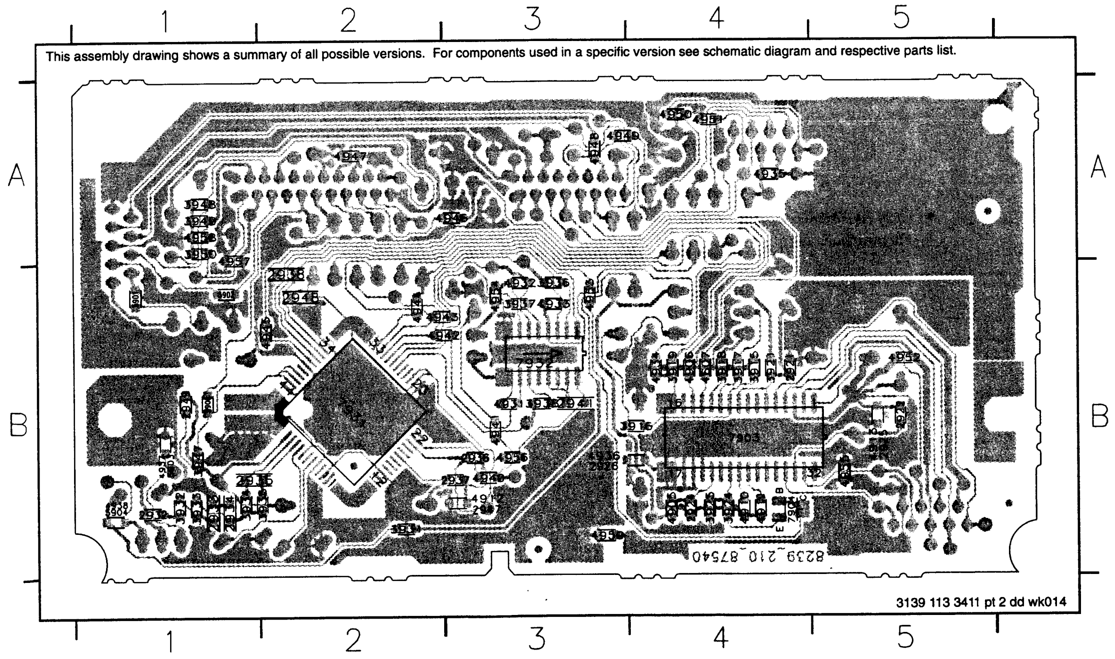
FRONT BOARD - DAC PART
(Not for Karaoke version with ASD-1 Module application)

DAC BOARD - COMPONENT & CHIP LAYOUTS

1901	B4	1909	A1	2939	A1	9902	A1	9909	B2	9914	B3	9920	A3	9925	B3	9930	B4
1903	B3	1931	B4	2940	A2	9903	B1	9910	B2	9916	B2	9921	A4	9926	A4	9931	B4
1904	B2	2923	A5	2946	A1	9904	A1	9911	B2	9917	B3	9922	A4	9927	B4	9932	B3
1905	A1	2927	A5	5905	B2	9906	A1	9912	B2	9918	A3	9923	A4	9928	B4	9933	A5
1908	A5	2931	A1	9901	A2	9908	A2	9913	A2	9919	A3	9924	B3	9929	B4	9934	A5


This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.
1
2
3
4
5
A
B
9906
1904
1903
1901
9920
9934
8239_210_87540
3139 113 3411 pt 2 dd wk014

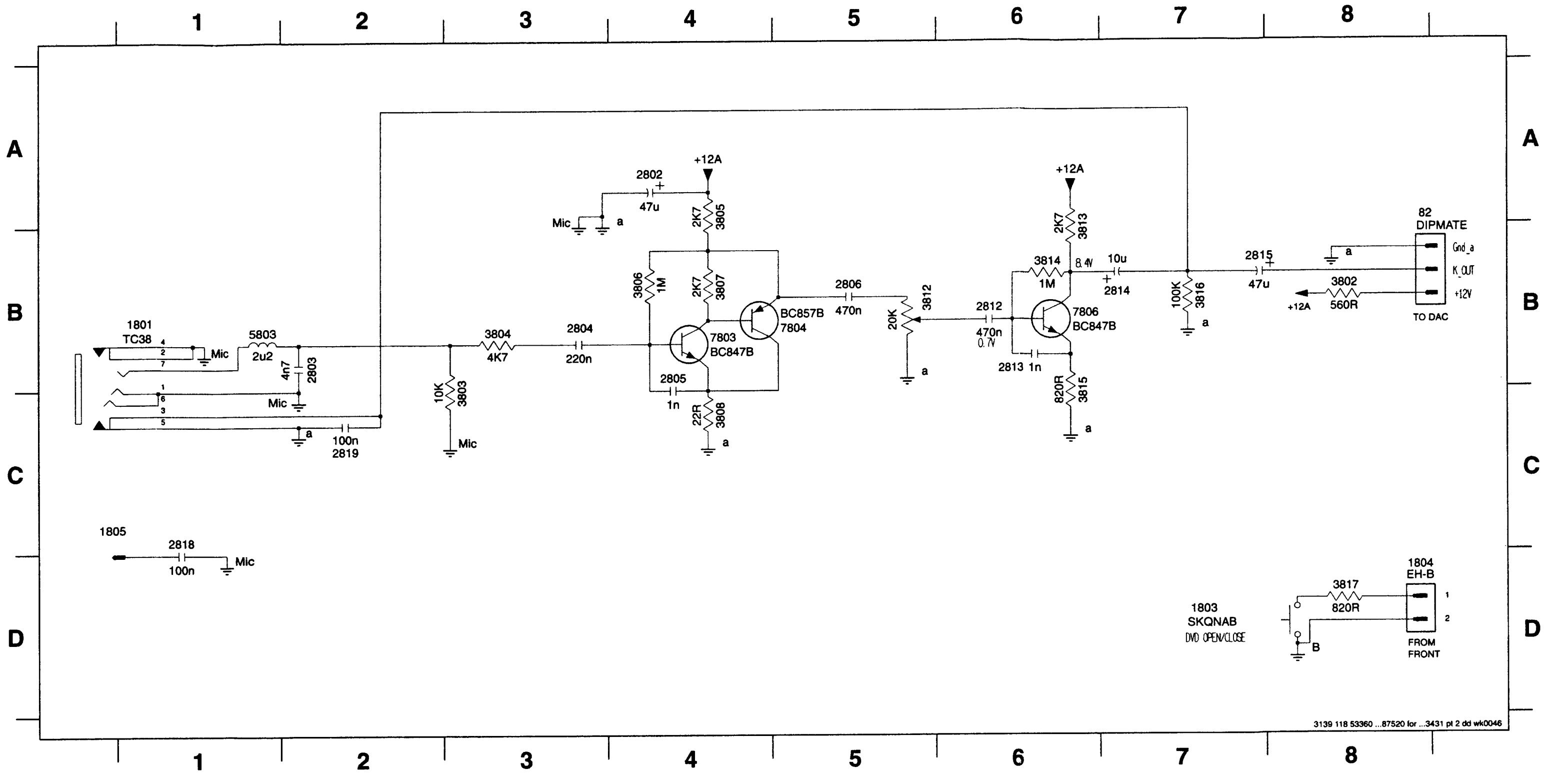
2921	B4	2935	B1	3915	B4	3931	B2	3947	B1	4911	B4	4936	B3	4945	B2	4953	B3	5902	B1
2922	B5	2936	B3	3916	B4	3932	B1	3948	A1	4912	B3	4937	B1	4946	A3	4954	B3	5903	B1
2924	B4	2937	B3	3917	B4	3933	B1	3949	A1	4913	B5	4938	B1	4947	A2	4955	B5	5904	B1
2925	B5	2938	B2	3918	B4	3934	B1	3950	A1	4931	B3	4940	B3	4948	A3	4956	B3	5906	B1
2926	B3	2941	B3	3919	B4	3935	B2	4607	B4	4932	B3	4941	B3	4949	A3	4957	A1	7903	B4
2932	B1	2947	B3	3921	B4	3936	B3	4905	B4	4933	B3	4942	B3	4950	A4	4958	A1	7904	B4
2933	B1	2948	B2	3924	B4	3937	B3	4906	B4	4934	B4	4943	B2	4951	A4	4959	B3	7931	B2
2934	B1	2949	B1	3925	B4	3938	B3	4910	B4	4935	A4	4944	B2	4952	B5	5901	B1	7932	B3


This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.
1
2
3
4
5
A
B
8239_210_87540
3139 113 3411 pt 2 dd wk014

FRONT BOARD - MIC & OPEN/CLOSE PART

MIC & OPEN/CLOSE PART - CIRCUIT DIAGRAM

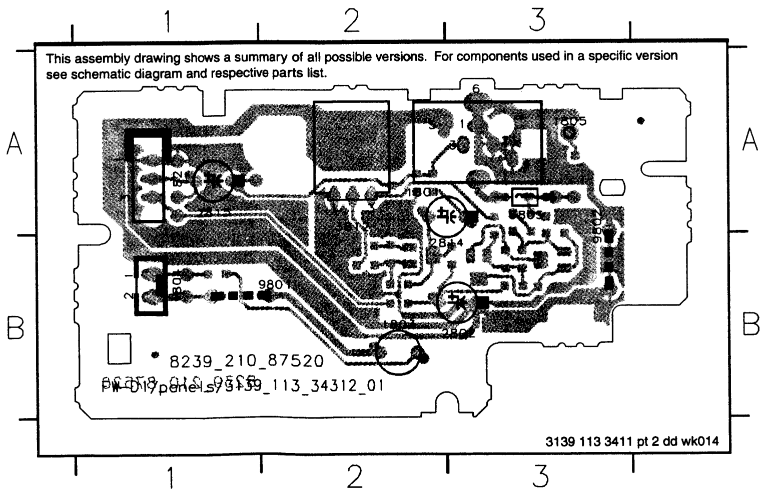
82	A8	1803	D7	1805	C1	2803	B2	2805	B4	2812	B6	2814	B7	2818	C1	3802	B8	3804	B3	3806	B4	3808	C4	3813	B6	3815	C6	3817	D8	7803	B4	7806	B6
1801	B1	1804	D8	2802	A4	2804	B3	2806	B5	2813	B6	2815	B7	2819	C2	3803	C3	3805	A4	3807	B4	3812	B5	3814	B6	3816	B7	5803	B1	7804	B5		

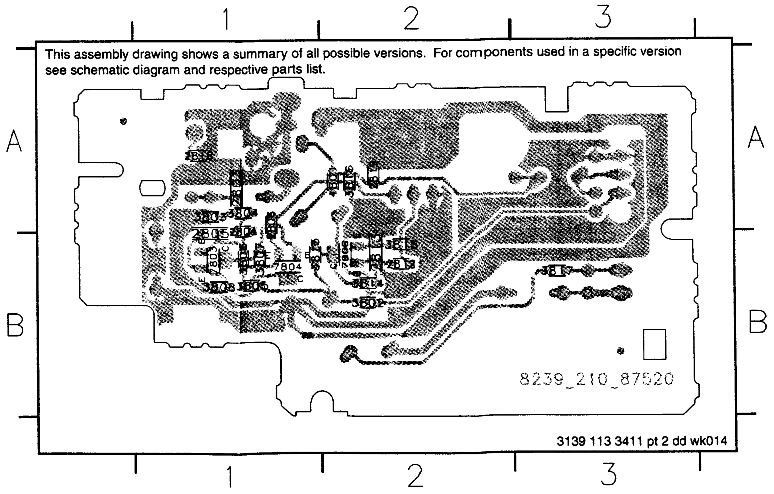

1
2
3
4
5
6
7
8
A
B
C
D
+12A
2802
47u
Mic
a
2K7
3805
3806
1M
2K7
3807
BC857B
7804
7803
BC847B
2806
470n
20K
3812
1801
TC38
Mic
5803
2u2
4n7
2803
Mic
100n
2819
3804
4K7
2804
220n
10K
3803
Mic
2805
1n
22R
3808
+12A
2K7
3813
3814
1M
8.4V
10u
2814
2812
470n
0.7V
2813 1n
7806
BC847B
820R
3815
100K
3816
2815
47u
82
DIPMATE
Gnd_a
K_OUT
+12V
3802
560R
TO DAC
1805
2818
100n
Mic
1803
SKQNAB
DVD OPEN/CLOSE
B
3817
820R
1804
EH-B
FROM
FRONT
3139 118 53360 ...87520 for ...3431 pt 2 dd wk0046

MIC & OPEN/CLOSE BOARD - COMPONENT & CHIP LAYOUTS

82	A1	1803	B2	1805	A3	2814	B3	3812	A2	9801	B2
1801	A2	1804	B1	2802	B3	2815	A1	5803	A3	9802	A3

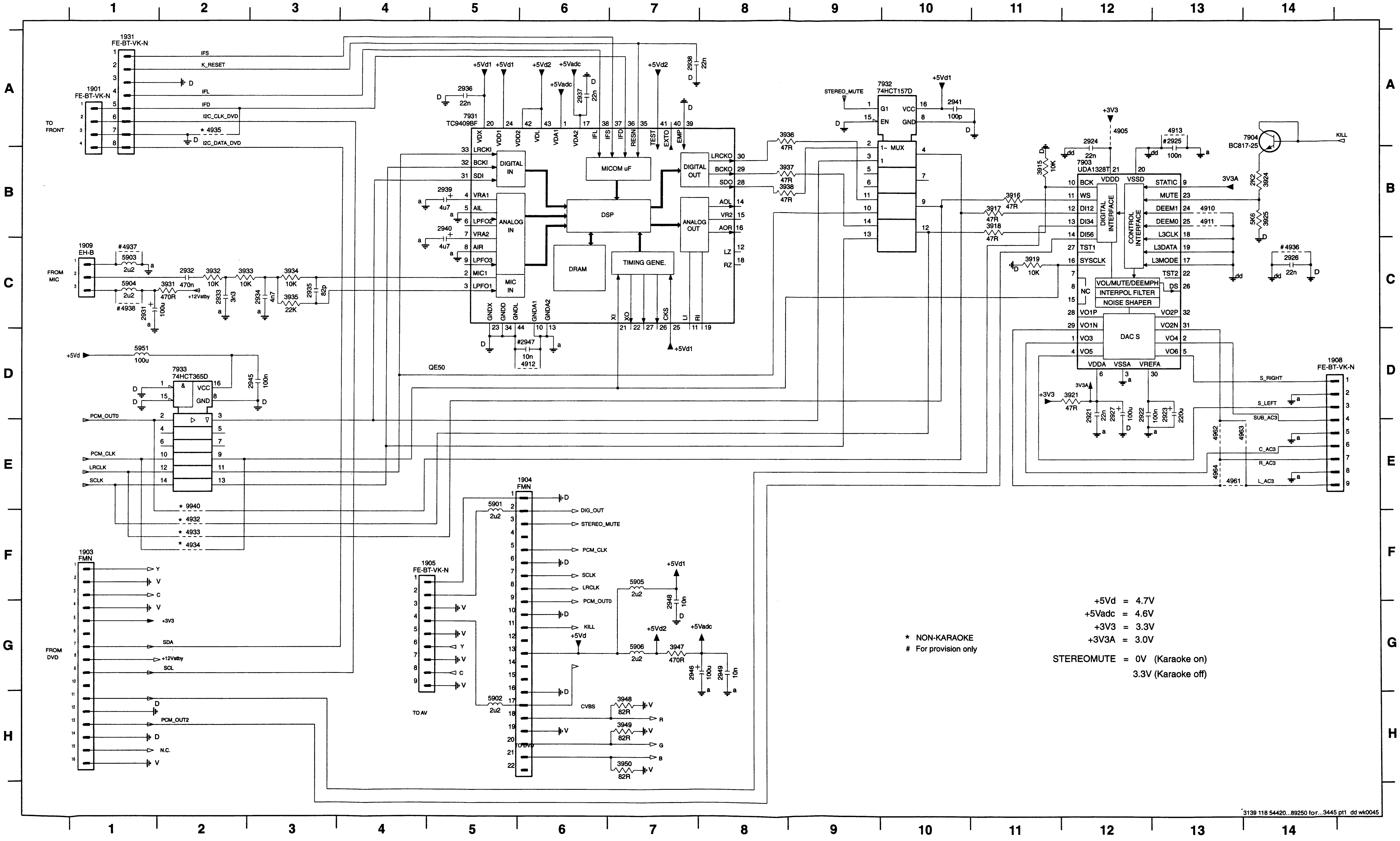
2803	A1	2812	B2	3802	B2	3806	B1	3814	B2	4801	A2
2804	A1	2813	B2	3803	A1	3807	B1	3815	B2	7803	B1
2805	B1	2818	A1	3804	A1	3808	B1	3816	A2	7804	B1
2806	A1	2819	A2	3805	B1	3813	B1	3817	B3	7806	B2


This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.
1
2
3
A
B
8239_210_87520
3139 113 3411 pt 2 dd wk014


This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.
1
2
3
A
B
8239_210_87520
3139 113 3411 pt 2 dd wk014

NEW DAC BOARD - CIRCUIT DIAGRAM (From wk101 onwards)

1901 A1
1903 F1
1904 E6
1905 F4
1908 D14
1909 C1
1931 A1
2921 D12
2922 D12
2923 D13
2924 A12
2925 A13
2926 C14
2927 D12
2931 C1
2932 C2
2933 C2
2934 C3
2935 C3
2936 A5
2937 A6
2938 A7
2939 B5
2940 B5
2941 A10
2945 D3
2946 G7
2947 D6
2948 G7
2949 G8
3915 B11
3916 B11
3917 B11
3918 B11
3919 C11
3921 D12
3924 B14
3925 B14
3931 C2
3932 C2
3933 C2
3934 C3
3935 C3
3936 A8
3937 B8
3938 B8
3947 G7
3948 H7
3949 H7
3950 H7
4905 A12
4910 B13
4911 B13
4912 D6
4913 A13
4932 F2
4933 F2
4934 F2
4935 A2
4936 C14
4937 C1
4938 C1
4961 E13
4962 E13
4963 E14
4964 E13
5901 E5
5902 H5
5903 C1
5904 C1
5905 F7
5906 G7
5951 D1
7903 B12
7904 A14
7931 A5
7932 A9
7933 D2
9940 E2


1
2
3
4
5
6
7
8
9
10
11
12
13
14
A
B
C
D
E
F
G
H
1931
FE-BT-VK-N
1901
FE-BT-VK-N
TO FRONT
IFS
K_RESET
IFL
IFD
I2C_CLK_DVD
I2C_DATA_DVD
* 4935
+5Vd1
+5Vd2
+5Vadc
2936
22n
2937
22n
2938
22n
7931
TC9409BF
VDX
VDD1
VDD2
VDL
VDA1
VDA2
IFL
IFS
IFD
RESN
TEST
EXTO
EMP
LRCKI
BCKI
SDI
DIGITAL IN
MICOM uF
DIGITAL OUT
LRCKO
BCKO
SDO
VRA1
AIL
LPFO2
VRA2
AIR
LPFO3
MIC1
LPFO1
ANALOG IN
MIC IN
DSP
ANALOG OUT
AOL
VR2
AOR
LZ
RZ
DRAM
TIMING GENE.
GNDX
GNDD
GNDL
GNDA1
GNDA2
XI
XO
CKS
LI
RI
2939
4u7
2940
4u7
#2947
10n
4912
1909
EH-B
FROM MIC
#4937
5903
2u2
5904
2u2
#4938
2931
100u
3931
470R
2932
470n
+12Vstby
3932
10K
2933
3n3
3933
10K
2934
4n7
3934
10K
3935
22K
2935
82p
STEREO_MUTE
7932
74HCT157D
G1
EN
VCC
GND
2941
100p
1- MUX
3936
47R
3937
47R
3938
47R
+5Vd
5951
100u
7933
74HCT365D
2945
100n
PCM_OUT0
PCM_CLK
LRCLK
SCLK
QE50
* 9940
* 4932
* 4933
* 4934
+3V3
4905
2924
22n
7903
UDA1328T
#2925
100n
4913
7904
BC817-25
KILL
3915
10K
BCK
WS
DI12
DI34
DI56
TST1
SYSCLK
NC
VO1P
VO1N
VO3
VO5
VDDD
VSSD
DIGITAL INTERFACE
CONTROL INTERFACE
STATIC
MUTE
DEEM1
DEEM0
L3CLK
L3DATA
L3MODE
TST2
DS
VOL/MUTE/DEEMPH
INTERPOL FILTER
NOISE SHAPER
DAC S
VO2P
VO2N
VO4
VO6
VDDA
VSSA
VREFA
3V3A
2K2
3924
5K6
3925
4910
4911
3916
47R
3917
47R
3918
47R
3919
10K
#4936
2926
22n
3921
47R
2921
22n
2927
100u
2922
100n
2923
220u
4962
4963
4964
4961
1908
FE-BT-VK-N
S_RIGHT
S_LEFT
SUB_AC3
C_AC3
R_AC3
L_AC3
1904
FMN
DIG_OUT
STEREO_MUTE
PCM_CLK
SCLK
LRCLK
PCM_OUT0
KILL
5901
2u2
5902
2u2
1905
FE-BT-VK-N
TO AV
5905
2u2
2948
10n
5906
2u2
3947
470R
2946
100u
2949
10n
CVBS
3948
82R
3949
82R
3950
82R
R
G
B
TO DVD
1903
FMN
FROM DVD
Y
V
C
SDA
SCL
PCM_OUT2
N.C.
D
a
dd

* NON-KARAOKE
# For provision only

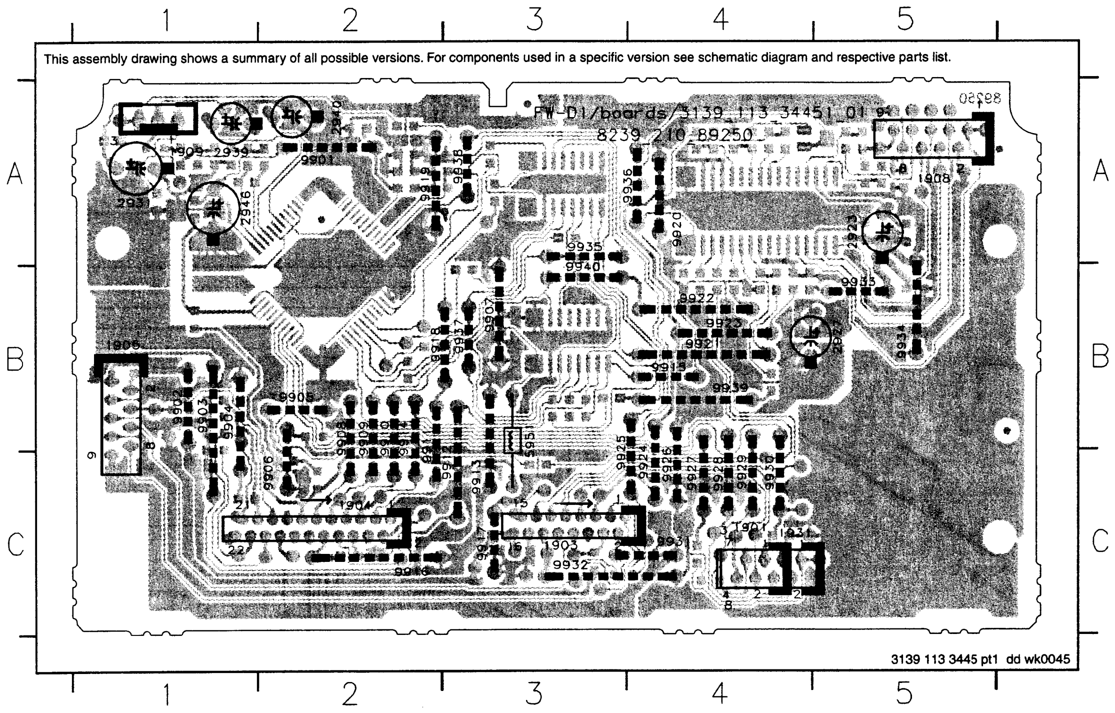
+5Vd = 4.7V
+5Vadc = 4.6V
+3V3 = 3.3V
+3V3A = 3.0V

STEREOMUTE = 0V (Karaoke on)
3.3V (Karaoke off)

3139 118 54420...89250 for...3445 pt1 dd wk0045

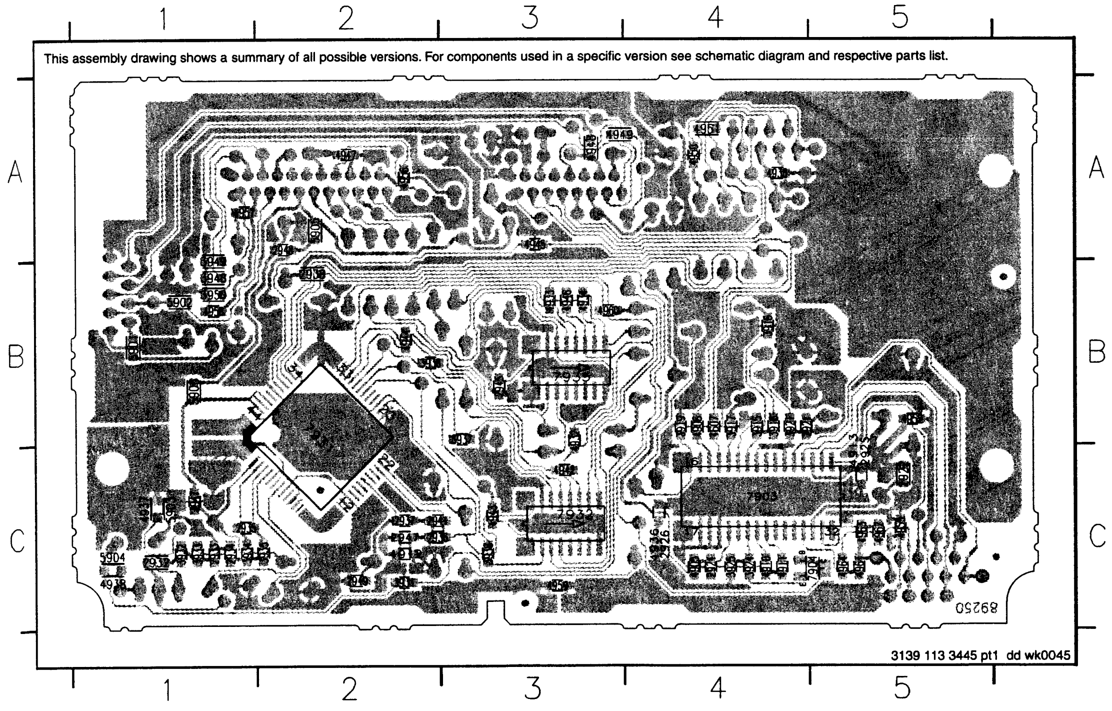
NEW DAC BOARD - COMPONENT & CHIP LAYOUTS (From wk101 onwards)

1901	C4	1931	C4	2946	A1	9905	B2	9911	B2	9917	C3	9923	B4	9929	C4	9935	A3
1903	C3	2923	A5	5951	B3	9906	C2	9912	C3	9918	B2	9924	C4	9930	C4	9936	A4
1904	C2	2927	B5	9901	A2	9907	B3	9913	C3	9919	A2	9925	C3	9931	C4	9937	B3
1905	B1	2931	A1	9902	B1	9908	B2	9914	B2	9920	A4	9926	C4	9932	C3	9938	A3
1908	A5	2939	A1	9903	B1	9909	B2	9915	B4	9921	B4	9927	C4	9933	B5	9939	B4
1909	A1	2940	A2	9904	B1	9910	B2	9916	C2	9922	B4	9928	C4	9934	B5	9940	B3



This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.

2921	B4	2936	C2	3916	B4	3933	C1	3950	B1	4933	B3	4945	A3	4956	A2	5901	B1	7932	C3
2922	C5	2937	C2	3917	B4	3934	C1	4607	B4	4934	B3	4946	B3	4957	A1	5902	B1	7933	B3
2924	C4	2938	B2	3918	B4	3935	C2	4905	C4	4935	A4	4947	A2	4958	B1	5903	C1		
2925	C5	2941	C2	3919	B4	3936	B2	4906	B4	4936	C4	4948	A3	4959	C3	5904	C1		
2926	C4	2945	B3	3921	B4	3937	B3	4910	C4	4937	C1	4949	A3	4960	B3	5905	A2		
2932	C1	2947	C2	3924	C4	3938	C3	4911	C4	4938	C1	4950	A4	4961	C5	5906	B1		
2933	C1	2948	A2	3925	C4	3947	C1	4912	C2	4942	C3	4951	A4	4962	C5	7903	C4		
2934	C1	2949	C2	3931	C2	3948	B1	4913	C5	4943	C3	4952	B5	4963	C5	7904	C5		
2935	C1	3915	B4	3932	C1	3949	A1	4932	B3	4944	B2	4955	C5	4964	C5	7931	B2		



This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.

ELECTRICAL PARTS LIST - DAC BOARD (New Board)

MISCELLANEOUS

1903	2422 025 16525	Flex Socket 16pin Vert.
1904	2422 025 16526	Flex Socket 22pin Vert.
1905	2422 025 14518	Flex Socket 9pin Vert.
1908	2422 025 14518	Flex Socket 9pin Vert.
1931	4822 265 11515	Flex Socket 8pin Vert.

CAPACITORS

2921	4822 126 14494	22nF 10% 25V
2922	4822 126 14585	100nF 10% 50V
2923	4822 124 11912	220µF 20% 6,3V
2924	4822 126 14494	22nF 10% 25V
2926	4822 126 14494	22nF 10% 25V
2927	4822 124 41584	100µF 20% 10V
2931	4822 124 40207	100µF 20% 25V
2932	4822 126 13482	470nF +80/-20% 16V
2933	5322 126 11579	3,3nF 10% 63V
2934	4822 126 13193	4,7nF 10% 63V
2935	4822 126 14226	82pF 5% 50V
2936	4822 126 14494	22nF 10% 25V
2937	4822 126 14494	22nF 10% 25V
2938	5322 122 32654	22nF 10% 63V
2939	4822 124 40769	4,7µF 20% 100V
2940	4822 124 40769	4,7µF 20% 100V
2941	4822 122 31765	100pF 2% 63V
2945	4822 126 14305	100nF 10% 16V
2946	4822 124 40207	100µF 20% 25V
2948	5322 126 11583	10nF 10% 50V
2949	5322 126 11583	10nF 10% 50V

RESISTORS

3915	4822 051 30103	10k 5% 0,062W
3916	4822 051 30479	47R 5% 0,062W
3917	4822 051 30479	47R 5% 0,062W
3918	4822 051 30479	47R 5% 0,062W
3919	4822 051 30103	10k 5% 0,062W
3921	4822 051 30479	47R 5% 0,062W
3924	4822 051 30222	2k2 5% 0,062W
3925	4822 051 30562	5k6 5% 0,063W
3931	4822 051 30471	470R 5% 0,062W
3932	4822 051 30103	10k 5% 0,062W
3933	4822 051 30103	10k 5% 0,062W
3934	4822 051 30103	10k 5% 0,062W
3935	4822 051 30223	22k 5% 0,062W
3936	4822 051 30479	47R 5% 0,062W
3937	4822 051 30479	47R 5% 0,062W
3938	4822 051 30479	47R 5% 0,062W
3947	4822 051 30471	470R 5% 0,062W
3948	2120 108 92604	82R 1% 0,1W
3949	2120 108 92604	82R 1% 0,1W
3950	2120 108 92604	82R 1% 0,1W
4607	4822 051 30008	0R Jumper 0603
4905	4822 051 30008	0R Jumper 0603
4906	4822 051 30008	0R Jumper 0603
4910	4822 051 30008	0R Jumper 0603
4911	4822 051 30008	0R Jumper 0603
4912	4822 051 30008	0R Jumper 0603
4913	4822 051 30008	0R Jumper 0603
4932	4822 051 30008	0R Jumper 0603 Non-Kara
4933	4822 051 30008	0R Jumper 0603 Non-Kara
4934	4822 051 30008	0R Jumper 0603 Non-Kara
4935	4822 051 30008	0R Jumper 0603 Non-Kara
4942	4822 051 30008	0R Jumper 0603
4943	4822 051 30008	0R Jumper 0603
4944	4822 051 30008	0R Jumper 0603
4945	4822 051 20008	0R Jumper 0805
4946	4822 051 30008	0R Jumper 0603
4947	4822 051 30008	0R Jumper 0603
4948	4822 051 20008	0R Jumper 0805
4949	4822 051 20008	0R Jumper 0805
4950	4822 051 30008	0R Jumper 0603
4951	4822 051 20008	0R Jumper 0805
4952	4822 051 30008	0R Jumper 0603
4955	4822 051 30008	0R Jumper 0603
4956	4822 051 30008	0R Jumper 0603
4957	4822 051 20008	0R Jumper 0805
4958	4822 051 20008	0R Jumper 0805
4960	4822 051 30008	0R Jumper 0603
4961	4822 051 30008	0R Jumper 0603 for FW-D5
4962	4822 051 30008	0R Jumper 0603 for FW-D5
4963	4822 051 30008	0R Jumper 0603 for FW-D1
4964	4822 051 30008	0R Jumper 0603 for FW-D1

COILS & FILTERS

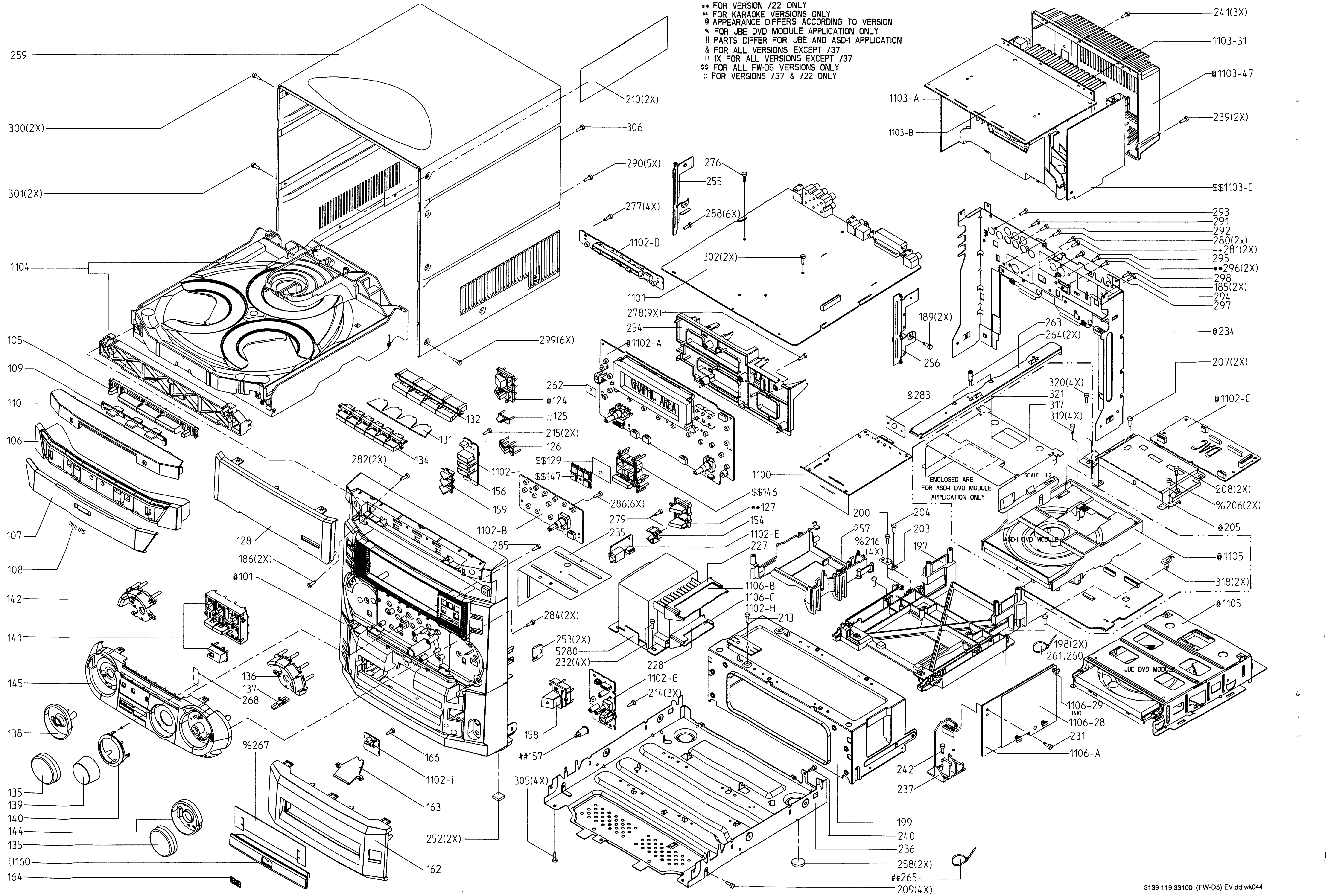
5901	4822 157 10586	Coil 2,2µH 10% 0805
5902	4822 157 10586	Coil 2,2µH 10% 0805
5903	4822 157 10586	Coil 2,2µH 10% 0805
5904	4822 157 10586	Coil 2,2µH 10% 0805
5905	4822 157 10586	Coil 2,2µH 10% 0805
5906	4822 157 10586	Coil 2,2µH 10% 0805
5951	4822 157 11228	Coil 100µH 5%

TRANSISTORS & INTEGRATED CIRCUITS

7903	4822 209 17423	UAD1328T
7904	4822 130 42804	BC817-25
7931	4822 209 15973	TC9409BF
7932	9337 137 50653	74HCT157D
7933	4822 209 16261	74HCT365D

Note: Only the parts mentioned in this list are normal service spare parts.

EXPLODED VIEW - MAIN UNIT


** FOR VERSION /22 ONLY
FOR KARAOKE VERSIONS ONLY
@ APPEARANCE DIFFERS ACCORDING TO VERSION
% FOR JBE DVD MODULE APPLICATION ONLY
!! PARTS DIFFER FOR JBE AND ASD-1 APPLICATION
& FOR ALL VERSIONS EXCEPT /37
++ 1X FOR ALL VERSIONS EXCEPT /37
$$ FOR ALL FW-D5 VERSIONS ONLY
;; FOR VERSIONS /37 & /22 ONLY

259
300(2X)
301(2X)
1104
105
109
110
106
107
108
PHILIPS
142
141
145
138
135
139
140
144
135
!!160
164
210(2X)
306
290(5X)
299(6X)
128
186(2X)
@101
282(2X)
132
131
134
@124
;;125
215(2X)
126
1102-F
156
159
$$129
$$147
286(6X)
1102-B
285
235
284(2X)
136
137
268
%267
166
1102-i
163
162
252(2X)
305(4X)
276
255
277(4X)
288(6X)
1102-D
302(2X)
1101
278(9X)
254
@1102-A
262
GRAPHIC AREA
$$146
**127
154
279
1102-E
227
1106-B
1106-C
1102-H
213
253(2X)
5280
232(4X)
228
1102-G
214(3X)
158
##157
199
240
236
258(2X)
##265
209(4X)
189(2X)
256
1100
&283
200
257
%216
(4X)
204
203
197
1103-A
1103-B
241(3X)
1103-31
@1103-47
239(2X)
$$1103-C
293
291
292
280(2x)
++281(2X)
295
**296(2X)
298
185(2X)
294
297
@234
263
264(2X)
207(2X)
320(4X)
321
317
319(4X)
@1102-C
ENCLOSED ARE
FOR ASD-1 DVD MODULE
APPLICATION ONLY
SCALE 1:2
208(2X)
%206(2X)
@205
ASD-1 DVD MODULE
@1105
318(2X)
@1105
JBE DVD MODULE
198(2X)
261,260
1106-29
(4X)
1106-28
231
1106-A
242
237

3139 119 33100 (FW-D5) EV dd wk044